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ABSTRACT

A study compared students' perceptions about the quality and cost-effectiveness of and satisfaction with feedback they get through: written correspondence; face-to-face sessions; and non-contiguous interaction on electronic media. The survey received responses from 529 of 2,500 active students of the German FernUniversitat (FeU) and 653 of 2,500 active students of the Indian Indira Gandhi National Open University (IGNOU). Comparative analysis revealed a number of significant differences that supported the hypothesis that material development of a society results in better support to students in distance education. In general, FeU was found to provide its students better feedback than IGNOU. FeU students found feedback from all forms of noncontiguous communication to be significantly more cost effective than IGNOU students. Feedback through computer-marked assignments was better than tutor-marked assignments at FeU and it was least qualitative and cost effective at IGNOU, reflecting the impact of industrialization in Germany on distance education. Another support for this contention was that, although qualitatively the two universities did not differ significantly in tutor-marked assignments to students, FeU students perceived it to be more cost effective. Distance students in both universities viewed face-to-face sessions very positively. (Appendixes include 44 references and the student questionnaire.) (YLB)

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Quality of feedback in Distance Education

a comparative study
of India and Germany

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Zentrales Institut für Fernstudienforschung
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Quality of feedback in Distance Education: A Comparative Study of India and Germany

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Harish C.S. Rathore
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1 Introduction

Based on the responses of randomly selected 529 active students of the German FernUniversität and 653 active students of the Indian Indira Gandhi National Open University, this study reports, in a comparative perspective, students' perceptions about the quality and cost-effectiveness of - and satisfaction with - feedback they get through : (i) written correspondence, such as: tutor-marked assignments, computer-marked assignments, and personal correspondence the students initiate with their teaching staff; (ii) face-to-face sessions, such as: individual contact with teaching staff, voluntary contact with tutor/mentor at the study centres, and participation in group seminars organised by the faculty; and (iii) non-contiguous interaction on electronic media such as: the telephone, teleconferencing, and computer networking through the internet. In addition the study also reports the relative quality of - , cost-effectiveness of - and students' satisfaction with - the feedback they get through the three types of written correspondence and face-to-face interaction sessions, separately for the FernUniversität and the Indira Gandhi National Open University.

1.1 The Problem

Tutorial support to students has been a persistent theme of empirical research in the field of Distance Education (DE), which has been focused on a variety of aspects and issues related to supporting students' learning at a distance. As the student is the end user of the tutorial support provided by the distance teaching institutions, often her/his views, perceptions or reactions about the tutorial help have been focused in this research as the criteria to evaluate the suitability of the support she/he is getting through various modes adopted by supporting institutions. For example, literature survey by Morgen and Morris (1994) reports on distance students' views of tutorial help, and the survey by Naylor, Cowie and Stevenson (1990) reports on distance students' and tutors' perceptions of tutorial practices in Britain. Similarly student and tutor perceptions about the quality of courses have been reported by Burge et al (1991) for Canada and by Scriven (1991) for Australia. Recently a study has been reported on students' perceived expectations of the tutor's role in distance learning by Stevenson et al (1996) for students of the Open University, U.K.

In addition, there are similar examples of studies which report students perception about suitablity of the instructional systems of correspondence courses (Rathore 1991, 1993a, 1994) and Indira Gandhi National Open University (Tyagi and Sahoo 1992) in India. In Germany, for example, Ströhlein & Fritsch (1986) based on FernUniversität students' report concluded that in terms of learning success the contribution of assignments and tutoring at the study centres is the same. In another study Fritsch (1989) found that students of FernUniversität viewed tutor comments generated with the help of computer more positively than the conventional tutor comments. With regard to the support from study centres, von Prümmer & Rössie (1990) and Kirkup & von Prümmer (1992), based on the perceptions of students from German FernUniversität and the British Open University, reported several indicators about the accessibility, use and value of study centres, besides the problems and factors that hinder, particularly the women students, in taking a full advantage of the learning support available at the study centres. Two recent studies by Hofmann-Broll (1995) and von Prümmer & Rössie (1996) provide empirical evidence about availability of computers with FernUniversität students and the facilities offered on the Net-News by this university and how they are being utilized by the students.

Although these and some other studies throw light on issues such as: the teaching value of assignments and tutor's comments on them; the suitability of the turn-around time of assignments; the tutorial help at the study centres; the expectations of the students from their tutors at the study centres or those checking the assignments; and they often highlight problems and difficulites faced by the students in getting proper feedback. But they fail to provide any evidence about the quality of feedback the students perceive to get through the support strategies adopted by their supporting institutions. Further, little is known about the satisfaction of distance students with the feedback they get and as to what is the perceived cost-effectiveness of this feedback. It is in this context the present study was undertaken to specifically provide empirical answers to these questions:

1. What are the perceptions of distance students regarding the quality of feedback they are getting through the support strategies adopted by their institution?
2. How satisfied are the students with the feedback they get from their institution?
3. Do they consider the received feedback to be cost-effective?

1.2 The theoretical frame[1]

An educational transaction is effected by the act of teaching, but "the act of teaching is not simply to pass on the content as if it were the absolute truth. The content of education may represent societal knowledge but not the unquestionable truth" (Garrison, 1989). Hence teaching must have a scope for critical analysis of this knowledge to allow interpretations based upon individual experiences and cognition. In essence teaching is a special kind of two-way communication which allows room for the negotiation of meaning and the prospect of mutual learning through dialogue and discusson, and is designed to transact what is called educational. For an educational transaction to take place it is essential that the communication should be real. The communication can be taken to be real only when at least the party at the receiving end is satisfied and gives an evidence of having received the educational message with similar meaning, structure and form as it was intended to be communicated.

In the conventional face-to-face teaching situation it is very easy to ascertain if real communication has taken place or not. The teacher and the students, being face-to-face, have the possibility and freedom to enter into a dialogue or discussion to negotiate about the meaning, structure and the correctness of the communicated educational message. In this way in the conventional face-to-face teaching the feedback is immediate, potent and insistent for both parties, i.e. the teacher and the taught, to be satisfied about the exact (or actual) transaction of the educational message.

But in Distance Education (DE), because of the separation of the teacher from the learners, establishment of a two-way communication channel allowing negotiation of meaning with a scope of insistent and potent feedback is a very big challenge. In DE the quality of negotiation and the satisfaction of the involved parties is largely dependent upon the mediating capabilities of the used communication technology and the **quality of feedback** provided by them, besides it also depends upon the organizational and human back-up behind the operational feedback strategy adopted by a DE system. Whatever media combination may be put into operation, the ultimate aim of an adopted feedback strategy is to provide feedback of good quality to the students, that allows them to negotiate about the meaning of the delivered educational messages. Although the second and the third generation communication technologies have made non-contiguous two-way communication possible and an increasing number of distance teaching universities are experimenting their application in their delivery of instruction, still little is known about the quality of the feedback that students get through various feedback strategies which their distance teaching institutions adopt for supporting their learning.

---

[1] The theoretical frame is based upon the postition taken by Garrison (1989) in chapter 2 about Communication in Distance Education.

In this context one may question as to what constitutes a 'good feedback' in distance education that may be perceived as 'qualitative' by the students - the beneficiaries of DE? The question raises two issues: the first is a theoretical issue that demands a decision as to whether the elements of good feedback in distance teaching are different from those in the conventional teaching; and the second issue relates to the individual differences in the students' perceptions of what they consider as qualitative feedback that helps them to accomplish their study aims through DE. This is a matter of empirical verification to which this study is specifically addressed to.

With regard to the elements of good instructional feedback, as has already been said it must allow **negotiation of meaning** and it must be **insistent and potent**. The essential condition for negotiating the meaning of the delivered educational message is that there must be a two-way communication channel allowing sufficient opportunities for a dialogue and discussion. The sufficient allowance for dialogue qualifies the feedback to be insistent i.e. one could question, cross question and insist upon one's point of view till he is convinced about the correctness and validity of the content of the educational message. The potency of the feedback is reflected in the ability of the reciprocal dialogue between the teacher and the students to affect changes in their personal perspectives on the delivered educational message and to enable them to arrive at a mutually agreeable settlement on the point of their debate. Thus feedback in an educational setting, according to Garrison (1989), should go beyond a simple confirmation that a message has been received. Regarding the characteristic of good feedback Garrison discusses the five characteristics given by Store and Armstrong (1981). They are **immediacy, regularity, explanatory rather than judgemental, conciseness and clarity.** He goes on to discuss that the issue as to whether feedback is explanatory or judgemental is particularly central with regard to the educational transaction. Judgemental feedback simply confirms whether a student is right or wrong. This does not meet the requirements of two-way communication since there is no mutual influence or 'negotiation of meaning'. In the explanatory feedback, however, the student and the teacher may revise an existing impression.

Since both the distance and the conventional education systems aim at achieving the similar objectives of bringing desirable changes in the learners' behaviour, the above argument regarding the elements of good feedback applies equally to them, and hence two-way communication is essential for educational transaction in DE also. Of course, in DE one may not always expect two-way communication of the face-to-face type that one experiences in the coventional educational system. The communication in DE is of the non-contiguous type as dicussed by Holmberg (1985).

In DE, at the present point of development, after mailing the educational messages in the print format, the negotiation about the meaning of these messages is effected through any one or all or a combination of the following strategies:

i) written correspondence (through post, fax or e-mail);
ii) personal contact providing possibilities for face-to-face interaction;
iii) telephone conversation, often referred to as telephone tutoring;
iv) computer net-working / conferencing; and
v) audio- and video- teleconferencing.

Whether or not these strategies are providing feedback to students in DE of the quality discussed above? Previous research reveals inadequate evidence to enable us to judge the quality of feedback, received by the students, against the parameters of good feedback suggested by Store and Armstrong (1981). **It is in this context that this study was undertaken with the specific aim of evaluating the quality of feedback to students at the FernUniversität (FeU) in Germany and the Indira Gandhi National Open University (IGNOU) in India**. The study was undertaken to provide empirical answers to the following specific questions:

1. As to which two-way communication strategies are being adopted in these universities?
2. What is the quality of feedback to students through these strategies?
3. How satisfied are the students with the feedback they get?
4. Do the students consider this feedback to be cost-effective for them?

A comparison between FeU and IGNOU was undertaken because it was deemed to be significant from two angles: (i) it is expected to help in our understanding as to whether the material development (particularly the devlopment in communications technology) of a society results in better support to students in DE?; and (ii) as to whether adult students in the two cultures have different expectations about two-way interaction in DE? The second question is of particular significance in the light of the debate about students' autonomy in DE.

1.3 The objectives of the study

The study was targetted to achieve the following specific objectives:

1. To study and compare the quality of feedback through written correspondence, i.e. feedback through :
    - i) Tutor Marked Assignments (TMA);
    - ii) Computer Marked Assignments (CMA);
    - iii) Student initiated Personal Correspondence (PC).
2. To study the relative quality of feedback through written correspondence in terms of the selected dimensions of quality, its perceived cost-effectiveness and students' satisfaction with it.
3. To study and compare the quality of feedback during face-to-face interaction sessions, i.e. feedback during :
    - i) Individual Contact Sessions with faculty staff (IC);
    - ii) Voluntary Contact Sessions at the study centres (VCS);
    - iii) Seminars / Group Discussion Sessions (GS).
4. To study the relative quality of feedback during face-to-face interaction sessions in terms of the selected dimensions of quality, its perceived cost-effectiveness and students' satisfaction with it.
5. To study and, if possible, compare the quality of feedback through non-contiguous interaction on electronic media, such as :
    - i) Telephone;
    - ii) Internet;
    - iii) E-mail;
    - iv) Tele-conferencing.

1.4 The definitions

Within the above theoretical framework the important terms used in this study were operationally defined to carry the following meanings:

Distance Education - the sytem of educating students at a distance adopted by the FernUniversität, Hagen, Germany and the Indira Gandhi National Open University, New Delhi, India.

Feedback - the written or oral help provided to learners at a distance, that enables them to understand the delivered printed educational messages (the course content) in forms considered by them to be satisfactory, through strategies such as: (i) tutor marked assignments; (ii) computer marked assignments; (iii) replies to personal correspondence intiated by the student after getting the tutor comments on assignments; (iv) face-to-face interaction sessions individually or in groups either at the study centres or at designated places; (v) telephone tutoring; (vi) taking part in the tele-conferencing sessions; and (vii) entering into a discussion on the internet with the supporting staff.

Quality of feedback - has been judged against the five criteria of good feedback in DE suggested by Store and Armstorng (1989), they are: immediacy, regularity, explanatory rather than judgemental, conciseness and clarity. And the sixth quality suggested by Holmberg (1985) i.e. facilitativeness. In this study these six qualities have been operationally defined as below:

1. **Immediacy** - the feedback has the quality of immediacy if the distance student perceives the return of the replies to her/his assignments or other written or verbal queries to have reached her/him well in the expected time.

2. **Regularity** - the feedback is regular if the distance student perceives the return of the replies to her/his assignments or other written or verbal queries to have reached her/him at regular intervals in the similar sequence that she/he had sent them.

3. **Explanatory rather than judgemental** - the feedback is explanatory rather than judgemental if the comments on assignments or the delivery in response to written/verbal queries

is perceived by the student to explain in detail the causes of mistakes rather than simply telling what is right or wrong.

4. **Conciseness**- the feedback is concise if the tuorial comments on the assignemts or the delivery in response to written/verbal queries is perceived by the students to be giving to the point information needed by them to correct themselves.

5. **Clarity** - the feedback in the form of comments on the assignments and the delivery in response to written/verbal queries has clarity if it is perceived by the students to be free from doubts, difficulties and confusions.

6. **Facilitative** - the feedback is facilitative if it is perceived by the students to make their learning easy by removing difficulties and doubts.

Cost-effectiveness of feedback - has been measured in terms of distance students' response to a direct question i.e. ''On the whole do you think it is a cost-effective use of the money you spend to get the learning support from your institution?'' on a three point scale: (1) always; (2) sometimes; (3) never.

Satisfaction with feedbak - was measured by a Likert type five point attitude scale consisting of four items.

1.5 Delimitations

As the main aim of this research was to study the quality of feedback as perceived by the students of the FernUniversität and the Indira Gandhi National Open University, the study was intentionally delimited to include in the sample only those part-time and full-time students who were active and had been studying with these universities at least for a minimum period of two semesters. This delimitation was imposed as it was thought that only active students having a good exposure to the teaching / tutoring of these universities will be in a better position to report about the quality of feedback they have got from their supporting institution. Further such sampling of only active students was expected to result in a better response rate and less wastage in the form of unusable returns. Another compulsion that led to include only part-time and full-time students was the fact that, like the FeU, there are no guest students (Gasthörer) and the students of other German universities studying one or two courses (Zweithörer) in the IGNOU in India - hence if they were also included in the sample then comparison between the two universities would not have been possible.

2 Method and Procedure

Mailed survey method was adopted to collect data from students of FernUniversität, Germany and the students of Indira Gandhi National Open Universitiy, India. The details of the population, sample, data gathering instrument, data collection and its analysis procedures are presented in this chapter.

2.1 Population and sample

The target population for this study was defined to include only those part-time and full-time students of FeU and IGNOU who were active with these universities for at least a period of two semesters at the time of this survey i.e.August to October 1996. A student qualified as an active student if she/he had passed at least one course ('paper' in Indian terminology).

A random sample of 2500 addresses of the active students, as defined above, was taken from each university respectively with the help of the computer retrieval system installed at these universities. In this way a total of 5000 students constituted the survey sample in this study.

2.2 The questionnaire

A structured questionnaire having four distinct parts/sections was designed to yield data essential for achieving the objectives of this study. These sections pertained to :

Section 1. : Feedback through written correspondence.
Section 2. : Feedback during face-to-face sessions.
Section 3. : Feedback through contact on technical media; and
Section 4. : Biographical information of the subjects.

The questionnaire was prepared in three languages to suit the subjects in Germany and India. A Hindi and English version was prepared for the Indian subjects and a German version was prepared for the subjects in Germany.

Section 1. : Feedback through written correspondence

Section 1 contained a matrix of 17 x 3 items which sought information from the students about feedback they got respectively through Tutor Marked Assignments (TMA), Computer Marked Assignments (CMA) and Personal Correspondence (PC).

The first 6 items sought the following general information pertaining to TMA, CMA and PC:

- Number of assignments and personal letters written during the last one study year.
- Mode of their despatch i.e. post, fax or e-mail.
- The turn-around time of the reply.
- Suitability of the turn-around time.
- Expected duration of the turn-around time.
- The money spent for despatch and further correspondence.

The next 6 items sought students' perception on a three point scale (1= always, 2= sometimes, and 3= never) about the quality of feedback (against the 6 criteria of quality defined in 1.4) they got respectively through TMA, CMA and PC.

The next item was a direct question that sought students' perception on the above three point scale about the cost-effectiveness of the feedback they got respectively through TMA, CMA, and PC.

The next 4 items constituted the Likert type five point attitude items which were defined to measure students' satisfaction with the feedback they got respectively through TMA, CMA and PC. The test-retest reliability of this four item satisfaction scale after a gap of two weeks was computed for 100 subjects from IGNOU and was found to be .87. For a four item scale it is a satifactory index of scale's stability.

Section 2 : Feedback during face-to-face sessions

This section had 15 items, which were designed to elicit information from the students pertaining to feedback they got during the personal contact sessions either at the study centres form the tutors or during the seminars organised by the faculty. To maintain comparability between India and Germany only three modes of personal contact, found to be common in both universities, were studied. They are: (i) individual contact sessions with the faculty; (ii) voluntary contact sessions with tutors at the study centres; (iii) group discussions and seminars organised by the faculty.

In this section of the questionnaire the first five items were of a general nature, which sought information pertaining to:

- Their visits to the study centres.
- The time given for seminars with the faculty.
- The number of individual contacts during the last study year.
- The money spent on these contacts in one year.
- The contacts with fellow students at the study centres.

The next part in this section was a matrix of 5 x 3 items. The first four items asked questions pertaining to the quality of feedback that the students got during three different types of personal contact mentioned above. Against these questions the student had to give her/his perceptions of the quality of feedback on a three point scale i.e. 1= always, 2= sometimes, and 3= never.

The fifth item was a direct question pertaining to the cost effectiveness of the feedback during the three types of personal contact sessions that students had in order to supplicate their studies.

The next four items constituted the Likert type five point scale to measure students' satisfaction with the feedback they got during these face-to-face sessions. As mentioned earlier, this scale yielded a stability coefficient of .87 on IGNOU students.

Section 3 : Feedback through technical media

Three different types of technical media are found be in use in FeU and IGNOU. They are the telephone, the computers and the teleconferencing. In these universities the application of these media varies so widely that a comparison of the two universities was not technically possible. In the FeU, for example, the computers through the internet are being used for tutorial function, besides the net-news - a facility to order learning material and books from the Central library. In contrast the IGNOU has no such application of computers but it is using satellite based teleconferencing for tutoring purposes. In spite of these differences, the application ot these media has been studied from the angle of feedback to students and has been reported separately for the two universities. Naturally this part of the questionnaires had to be developed differently for these universities. In general the following types of questions (with some variations) regarding feedback from technical media were asked to the students in the two universities:

- The availability of the particular technical media.
- The type of use made of the available technical media.
- The frequency of contact on media such as telephone, internet or satellite link.
- The number of trials needed to enter into a meaningful contact with the desired person.
- The number of contacts had in the last study year.
- The amount of money spent on such contacts in one study year.
- The usefulness of such contacts from the point of view of facilitating learning.
- The perceived cost-effectiveness of using these media for feedback purposes.

Section 4 : Personal information

This section asked the students to supply some personal situational information, such as their age, sex, marital status, status as a student i.e. part-time or full-time, employment status, number of semesters studied as a distance student, number of courses passed so far, etc..

2.3 The despatch

The three versions of the questionnaire i.e. Hindi, English and German were despatched in two different stages in Germany and in India.

The German version was mailed to 2500 students of the FernUniversität along with a reply paid envelope in July 1996. Both the Hindi and the English versions were mailed to 2500 students of the Indira Gandhi National Open University along with a reply paid envelope in the first week of September 1996. Both Hindi and English versions were required to be mailed to subjects of IGNOU because of a large language disparity in India and because the exact information about the subjects' language could not be obtained from the university.

17 addresses in Germany and 64 addresses in India could not be delivered the questionnaire. The returns received by the end of October 1996 were used for this study. Unfortunately for want of time and costs a reminder could not be sent to non-respondents.

2.4 Response Rate

The details of the combined response rate and as well as separately for both universities are presented in table 2.1.

Table 2.1 The response rate

University	No. Mailed	Undelivered	Delivered	Returned	Response Rate
FeU	2500	17	2483	529	21.30%
IGNOU	2500	64	2436	653	26.80%
Total	5000	81	4919	1182	24.02%

Hence the final sample for this study constituted a total of 1182 students, of which 529 were from FeU and 653 from IGNOU. An overall response rate of 24.02% cannot be considered very satisfactory. Perhaps the reason for such a low response rate is that a reminder was not written to the non-respondents. As the sample was drawn strictly randomly from the two populations, one could reasonably assume representation and safely make meaningful inferences. However, as a note of caution, it would be safe to keep the low response rate in mind while making any generalization about the quality of feedback in these universities.

2.5 The statistical treatment

Simple descriptive statistics such as frequency distribution, percentages and averages were used to describe the general characteristics of the feedback in both universities. Certain simple statistical tests like Wilcoxon 2-sample test and T-test were applied to compare the quality of feedback in the two universities. Lastly One-way ANOVA followed by Duncan's Multiple Range Test was applied to compare the relative quality of feedback in the two universities.

Chapter 3

3. The Results

The presentation of results has been done under the following sections:

- Section 3.1 Presents the details of the sample.
- Section 3.2 Presents results pertaining to feedback through written correspondence.
- Section 3.3 Presents results pertaining to feedback during face-to-face sessions.
- Section 3.4 Presents results pertaining to feedback through technical media.

3.1 Characteristics of the sample

As has been mentioned in section 2.4, the final sample on which the results of this study are based consisted of 1182 students of which 529 were from FeU and 653 from IGNOU. In this section are presented the details of their age, gender, employment status and status as a distance student.

3.1.1 Age

Figures in table 3.1 reveal that more than 95% students in both universities are below 50 years in age. There seems to be more younger people in IGNOU, as it has 9.19% students below the 20 years age bracket, than in FeU which has only .38% in this age bracket.

Table 3.1 Age distribution of subjects

Age group → *Uni.* ↓	*up to - 20*	*21 - 30*	*31 - 40*	*41 - 50*	*51 - 60*	*61 - 70*	*71 - 80*
FeU	A= 2 B= .38% C= .38%	211 40.50% 40.88%	237 45.49% 86.37%	50 9.60% 95.97%	16 3.07% 99.04%	5 0.96% 100%	0 0.00 100%
IGNOU	A= 60 B= 9.19% C= 9.19%	245 37.52% 46.71%	248 37.98% 84.69%	76 11.64% 96.33%	19 2.91% 99.24%	4 0.61% 99.85%	1 0.15% 100%

A = Frequency B = Percent C = Cummulative percent

There may be two reasons for this: (i) in India the student enters the university after 12 years of schooling and in Germany it is possible only after 13 years of schooling; and (ii) because of a accute problem of **Numerus Clasus** in India more young students are compelled to join the distance education stream. Otherwise both universities seem to attract almost identical numbers of students in the older age groups. Hence they are definitely doing a good job of providing a second opportunity of higher education to those who are either in employment or who missed higher education because of some other reasons. This point will become more clear when the employment status of the subjects is examined below.

3.1.2 Gender

It is fairly clear from the figures in table 3.2 that FeU has more number of female students than the IGNOU, this difference may be statistically significant.

Table 3.2 Sex distribution

University	*Females*	*Males*	*Total*
FeU	193	332	525
	36.8%	63.2%	100%
IGNOU	151	502	653
	23.12%	76.88%	100%

Frequency missing = 4

The reasons for this may be seen in the conservative attitude of the Indian society, where male child's education is still more valued and it is held that a female predominantly has her role in the house making and child rearing. As a result number of females coming to higher education in India are less than in Germany, which is a much advanced and developed society. However, these figures for IGNOU are a bit shocking because a recent study by Singh (1994) on women in 'Dual Mode' distance teaching institution in India revealed a figure of 36.67% women in this system of distance education, which almost equals the FeU figures. Any way there appears a scope on the part of IGNOU to make its courses and system more attractive for women.

3.1.3 Employment status

With regard to the employment status of the subjects figures in table 3.3 reveal that 59.31% students of FeU and 66.62% students of IGNOU have full-time jobs. Thus it is clear that these universities are definitely doing a good job of providing opportunity of furthering higher education to working people.

Table 3.3 Employment status

University	*Full-time*	*Part-time*	*Unemployed*	*Total*
FeU	309	83	129	521
	59.31%	15.93%	24.76%	100%
IGNOU	435	60	158	653
	66.62%	9.19%	24.20%	100%

Frequency missing = 8

Approximately 7.0% more employed people in IGNOU should not be taken to mean that it is better than FeU in this regard. The observed difference is perhaps due to the tight competition on the job due to population and industrial growth in India, both increasing almost simultaneously. The number of part-time students in IGNOU is around 6.0% less than FeU. This can be interpreted in the light of the fact that in India there has been no tradition of part-time jobs. Still employers prefer to have full-time employees and it is really not very expensive too. Both universities have similar number of unemployed students. These figures are understandable for India, where due to the accute problem of unemploment and shortage of study places in the conventional universities many students continue to study through DE till they get a suitable job. But for Germany, where there is no dearth of study places in the conventional universities, why so many unemployed people study through DE can only be explained in the light of the growing educated un-employment in Germany in recent years. Perhaps after not finding a suitable job for a couple of years, people, finding themselves to be too old to study with youngsters, prefer to continue studies at FeU till they get a suitable job. This is a hunch which needs empirical verification.

3.1.4 Students' study status

The figures pertaining to students' study status, i.e whether they are part-time or full-time students, in Table 3.4 reveals that 41.21% in FeU and 26.35% in IGNOU are full-time students. The difference in the number of full-time students in these universities can be explained in the light of the employment status of the students (reported above) in the two universities.

Table 3.4 Students' study Status

University	*Full-time students*	*Part-time students*	*Total*
FeU	218	311	529
	41.21%	58.79%	100%
IGNOU	171	478	649
	26.35%	73:65%	100%

Frequency missing = 4

Obviously the rest 58.79% students in FeU and 73.65% students in IGNOU are part-time students. Looking at these figures of active part-time students in the distance teaching universities of the two countries, one could safely infer that for these many people in both countries DE has made possible university education for them.

As note of caution attention is drawn to the delimitation of this study (refer section 1.5) that only active students from these universities were included in the sample. Hence in interpreting these figures one must keep in mind this fact about the sample of this study. These figures and interpretations might change drastically if the total population registered with these universities is taken, as there may be a large number of non-starters and drop-outs who are not included in the sample of this study.

3.2 Feedback through written correspondence

Feedback through Tutor Marked Assignments (TMAs), Computer Marked Assignments (CMAs), and Personal Correspondence (PC) initiated by the students are the three forms of feedback to students in distance education that has been referred to in this study as feedback through written correspondence. The findings of this study pertaining to this feedback are presented in this section under the following three sub-sections :

3.2.1 Feedback through tutor marked assignments.
3.2.2 Feedback through computer marked assignments.
3.2.3 Feedback through personal correspondence.

3.2.1 Feedback through tutor marked assignments

In both FeU and IGNOU almost each unit of a course is followed by an assignment (there are only a few exceptions) which the student is expected to complete and send it for evaluation by tutors. The tutors are expected to not only evaluate the students' work and point out their mistakes but also provide them sufficient feedback by writing comments and suggestions, with the help of which the students may not only correct thier mistakes but also improve upon their work and change their perspective in the right direction about the content being learnt. In this way the tutor marked assignments constitute an important form of feedback to students in DE.

The objective 1.1 of this study was concerned with the study and comparison of feedback through tutor marked assignments in FeU and IGNOU. In this section are presented the findings of this study pertaining to this objective.

3.2.1.1 Number of TMAs written

With regard to the number of tutor marked assignments students send for evaluation in a study year, the figures in table 3.5 reveal that students of FeU send on an average around 10 to 11 assignments as compared to 2 to 5 sent by IGNOU students.

Table 3.5 Number of TMAs in a year

University	*up to 3*	*4 to 8*	*9 to 13*	*14 to 18*	*19 to 23*	*24 & Above*	*Mean*	*Mode*
FeU	144	121	85	58	26	35	11.49	10
	30.70%	25.80%	18.12%	12.37%	5.54%	7.47%		
IGNOU	370	80	41	16	6	5	5.09	2
	71.43%	15.44%	7.92%	3.09%	1.16%	.97%		

Frequency missing = 195

The data clearly indicates that the students of IGNOU, perhaps, send only the minimum compulsory number of assignments essential to get the green card to sit in the examination. Whereas the FeU students seem to send voluntarily more assignments than those required to sit in the examination. If this is the case then one could safely infer that TMAs at FeU are relatively rendering better tutorial function than TMAs at IGNOU - this point will become more clear later when the data pertaining to the quality of feedback through TMAs is examined.

3.2.1.2 Mode of despatch of TMAs

As regards the mode of sending tutor marked assignments for evaluation, almost every student of FeU despatches them by post, except five students who report to have used E-mail for this purpose. But in IGNOU only 41.3% students use post and others perfer to handover their assignments personally (35.5%) or use both post and hand delivery (23.2%).

3.6 Mode of Despatch of TMAs

University	*By Post*	*By Hand*	*Both*	*E-mail*	*Total*
FeU	429	nil.	nil.	5	434
	98.8%			1.2%	
IGNOU	242	208	136	nil.	586
	41.3%	35.5%	23.2%		

Frequency missing = 162

The practice of hand delivery in IGNOU is perhaps due to the fact that students are required to submit assignments to their tutors at the study centres to which they are attached to. Hence it appears that those students who have a study center in their city utilize their visit for both submitting the assignments as well as discussing with the tutor their difficulties.

3.2.1.3 Turn-around time of TMAs

The corrected and commented assignments of more than 85% students in FeU reach them back within 25 days (average = 23.95 and mode = 20 days).

Table 3.7 Turn-around time of TMAs

University	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*36 to 45 days*	*46 & above days*	*Mean*	*Mode*
FeU	30 7.35%	155 37.99%	161 39.46%	31 7.60%	24 5.88%	7 1.73%	23.95	20
IGNOU	31 7.18%	69 15.97%	97 22.45%	16 3.70%	17 3.94%	202 46.76%	61.79	60

Frequency missing = 342

In contrast the students of IGNOU get their assignments back on an average after around two months. If 25 days limit is considered as satisfactory in DE for turn-around time of TMAs, then only around 45.60% students of IGNOU get thier assignments within this time limit. It is surprising that almost every second (46.76%) student gets back her/his assignment after about two months in IGNOU. Although postal service in India is not as efficient as it is in Germany, it is certainly not so poor that more than double duration turn-around time at IGNOU can be assigned to it. There are certainly some institutional causes which IGNOU must look into.

3.2.1.4 Suitability of turn-around time of TMAs

Two questions were asked to get students' perceptions about the suitability of the turn-around time of TMAs: (i) whether the learning support through the TMAs reached the students well in the expected time or not? and (ii) how many days gap did they think was best for their planned studies? The responses of the students to these questions are presented in tables 3.8 and 3.9.

Table 3.8 Suitability of turn-around time

Q: Do you find the learning support through TMAs to have reached you: ↓	*FeU* *f*	*%*	*IGNOU* *f*	*%*
1. well in expected time	221	50.9	166	28.6
2. delayed but of some use	169	38.9	265	45.6
3. too delayed to be of any use	44	10.1	150	25.8

Frequencies missing = 95 + 72

As compared to 28.6% students of IGNOU 50.9% students of FeU find the learning support through the TMAs to have reached them well in the expected time. For 38.9% FeU and 45.6 % IGNOU students the Feedback through TMAs is delayed but still of some use. But it is too delayed to be of any use for 10% FeU and 25.8% IGNOU students. If examined in the light of the turn-around time of TMAs in these universities then these findings appear quite as expected.

When the students expectations about turn-around time that they consider best for their planned studies are examined, then one finds that the average expected time of FeU students is about 18 days and that of IGNOU students is 32 days. Although more than 66% FeU and 48% IGNOU students think two week as the best time. If examined in the light of the turn-around time and its suitability then the gap between students' expectations and reality is not big in the case of FeU, but for IGNOU there is scope to look into this matter and adopt ways and means to shorten the turn-around time of tutor marked assignments. In fact IGNOU cannot boast of being much superior to the dual mode universities in India in this regard (refer Rathore, 1993).

Table 3.9 Expected best turn-around time of TMAs

University	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*36 to 45 days*	*46 & above days*	*Mean*	*Mode*
FeU	121 30.33%	146 36.59%	113 28-32%	7 1.75%	7 1.75%	5 1.25%	17.72	14
IGNOU	102 20:8%	145 28.54%	155 30.51%	50 9.84%	17 3.35%	39 7.68%	32.29	30

Frequency missing = 275

3.2.1.5 Quality of feedback through TMA

In order to study the quality of feedback through TMAs, six questions pertaining to the six qualities of good feedback as defined in this study (refer chapter 3, section 1.4) were posed to the students in both universities. They were asked to read the question and decide whether the **Quality** in question was (i) always, (ii) sometimes, or (iii) never present in the feedback being provided to them through TMAs. Since it was difficult to assume these responses to be appearing on an equal interval scale, they were treated as ranks and Mann-Whitney U Test was applied to compare the quality of Feedback through TMAs in FeU and IGNOU. This section presents the results of this analysis along with the frequencies and percentages of students' response under each response category.

The responses pertaining to the Quality Regularity of feedback through TMAs in table 3.10 reveal that 33.56% FeU students, as compared to 27.69% IGNOU students, always find the feedback through TMAs to be coming back regularly in the same sequence they sent their assignments for evaluation. However, for 56.22% FeU and 42.22% IGNOU students it is only sometimes that this feedback is regular. But for 10.22% FeU and 30.09% IGNOU students this feedback is never regular.

Table 3.10 Regularity of TMAs

Q: Do the replies to your TMAs come back at regular intervals in the sequence you sent them?

Response → *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	450	151	253	46	
		33.56%	56.22%	10.22%	5.52
IGNOU	585	162	247	176	Prob. > 0.0001
		27.69%	42.22%	30.09%	

Since the Mann-Whitney test reveals a significant z-score it can safely be interpreted that the Feedback through TMAs is significantly more regular at FeU than at IGNOU. While this finding has important implication for IGNOU in the sense that it must look into its system of evaluating students' assignments and check on those points where delay is caused. However, it should not be taken to mean that even FeU is too good in this regard because only every third of its students (33.56%) always finds the return to be regular. Hence for the rest two thirds of the students even this university has to put the delivery of tutor marked assignments in a right gear.

With regard to the quality, whether the feedback through TMAs is, **Explanatory rather than judgemental** two questions were asked. The responses of students from both universities do not differ significantly (refer table 3.11), as far as the explanatoriness of feedback through TMAs is concerned.

Table 3.11 Explanatory nature of feedback through TMAs

Q: Do the tutor's comments explain in detail the causes of your mistakes and give information and suggestions needed to correct your mistakes?

Response ➔ *University* ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	463	106	291	66	
		22.89%	62.85%	14.25%	-1.025
IGNOU	572	208	222	142	Prob. > 0.3051
		36.36%	38.81%	24.83%	

However, on the whole the position in FeU appears to be slightly better than IGNOU, as it has only 14.24% students who never find tutor's comments to be sufficiently explanatory compared to later's 24.83% students. But then in IGNOU 36.36% students as compared to 22.89% of FeU always find the tutor's comments to be explanatory. Although statistically there is no signficant difference, the data in Table 3.11 is self revealing in the sense that tutors in both the universities are doing the expected job only for every third student in IGNOU and for every fourth or fifth student in FeU.

In respose to the question ' whether the replies/comments to your TMAs are simply judgemetal in nature?' the students in both universities do not differ significantly in their perceptions. However, the position seems to be better in FeU where, as compared to IGNOU's every third student, only every fourth student always finds the replies/comments to be jugdemental in nature. This is also corroborated by the fact that less number of students in FeU never find the replies to their TMAs as judgemental, though the number responding in the 'sometimes' category is much higher in it.

Table 3.12 Judgemental nature of feedback through TMAs

Q: Or you find the replies/comments to be judgemental i.e. simply pointing out mistakes?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	459	115	284	60	
		25.05%	61.84%	13.07%	1.545
IGNOU	542	170	224	148	Prob. > 0.1222
		31.37%	41.33%	27.31%	

Interpreting statistically the data in above tables, one could safely conclude that feedback through TMAs in both universities is equally explanatory and judgemental. But the response pattern of the subjects reflects a big scope for improvement in both universities.

With regards to the quality **conciseness of feedback through TMAs**, students' perceptions in table 3.13 reveal a statistically significant difference between the two universities and the feedback is more concise in IGNOU than in FeU. In other words, as compared to the perceptions of FeU students, the comments/replies written by the tutors of IGNOU are perceived by its students to be giving them significantly more to the point information that they need to correct their mistakes /doubts.

Besides this statistical interpretation, if one looks at the percentage of students' response in each response category then it is clear that in FeU only 27.43% students perceive the feedback through TMAs to be concise as against 43.59% IGNOU students.

Table 3.13 Conciseness of Feedback through TMAs

Q: Are the comments/replies concise i.e.giving to the point information needed to correct your mistakes/doubts?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	463	127	296	40	
		27.43%	63.93%	8.64%	-2.623
IGNOU	546	238	215	93	Prob. > 0.0087
		43.59%	39.38%	17.03%	

A large number of FeU students (63.93%) only sometimes find the tutor comments to be concisely giving them to the point information needed to correct their learning doubts/ mistakes - this indirectly reflects their concern about the conciseness of feedback through TMAs.

In response the question ‘ whether the feedback through TMAs is perceived by the students of these universities to be having the quality of **clarity**, the data in Table 3.14 reveals no significant difference between them. Hence it can be interpreted that tutorial replies/comments written in response to students assignments in these universities are equally free from doubts/confusions and difficulties. This, however, should not be taken to mean that tutorial comments in these universities are always having the quality of clarity, as only every third active student in them reports to always find this quality and a majority (59.96% in FeU and 40.62% in IGNOU) only sometimes find the comments to be clear.

Table 3.14 Clarity of Feedback through TMAs

Q: Do you find these comments/replies to be clear i.e. free from difficulties and confusions?

Response ➔ *University* ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	462	156	277	29	
		33.77%	59.96%	6.28%	1.084
IGNOU	549	217	223	109	Prob. > 0.278
		39.53%	40.62%	19.85%	

Are the tutorial comments/replies written in response to assignments perceived by the students' to be **Facilitating** their learning, which they are attempting as a distance learner? The results of this study in this regard (refer table 3.15) reveal no significant difference in the perception of students from both universities. Which means that feedback through TMAs in both FeU and IGNOU is equally facilitating learning at a distance. Apparently the position, in this regard, seems to be slightly better in FeU where only 11.45% students say they never find the comments to be facilitative. But if the response in the always category is considered than IGNOU has a slight edge over FeU.

Table 3.15 Facilitativeness of Feedback through TMAs

Q: Do you find these comments/replies to be facilitative i.e. they make learning easy by removing your learning doubts?

Response ➔ *University ⬇*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	463	152	258	53	
		32.83%	55.72%	11.45%	-.249
IGNOU	552	228	206	118	Prob. > 0.803
		41.30%	37.32%	21.38%	

Of the six qualites of feedback through TMAs, so far examined, the FeU was found to be significantly better than IGNOU in the quality **Regularity** and IGNOU was found to be significantly better than FeU in the quality **conciseness**. Otherwise the feedback through TMAs in both universities is equally **explanatory and judgemental, clear,** and **facilitative**.

In addition to these individual differences, does there exists a significant difference between these universities in the **overall quality** of feedback through TMAs? To answer this question the total response of students against the six quality questions from the two universites was compared. The results of this analysis are presented in table 3.16.

Table 3.16 Overall quality of feedback through TMAs

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	438	211214.50	482.224	-.483
IGNOU	535	262636.50	490.90	Prob. > = 0.6286

Clearly the two universities do not differ significantly as far as the overall quality of feedback through tutor marked assignments is concerned. Which means those evaluating the students' assignments and providing written feedback to students in these universities are doing their job amost equally effectively.

3.2.1.6 Cost-effectiveness of feedback through TMAs

The students, being the end users of the feedback they get through tutor marked assignments, know how much time and money they are spending for it. Hence they are the best judges to assess the cost-effectiveness of this feedback. It may be noted that, if evaluated in terms of how much one has to spend to post one letter of 100 gram weight from what one earns in the two countries, the postal costs in India are much higher than in Germany and thus the direct cost comparison between the two countries is not possible. Another problem in studying the cost-effectiveness of feedback through TMAs was to decide upon a suitable criterion of effectiveness. Hence it was decided to take students' perception as the criterion to study the cost-effectiveness of the feedback through TMAs, as they can best judge for themselves whether they are getting the optimum return of time and money they are spending to get feedback through TMAs or not.

The students' responses to a direct question about the cost-effectiveness of feedback through TMAs (see table 3.17) revealed a significant difference between the two universities.

Table 3.17 Cost-effectiveness of Feedback through TMAs

Q: On the whole, how often you find it to be a cost effective use of the money you spent to get feedback through tutor marked assignments?

Response ➔ *University ⬇*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	439	204	198	37	
		46.47%	45.10%	8.43%	2.109
IGNOU	559	241	229	89	Prob. > 0.0349
		43.11%	40.97%	15.92%	

Specifically the students of FeU perceived their feedback through TMAs to be significantly more cost-effective than the students of IGNOU. Besides the less direct cost involved in posting the assignments, the other reason for this difference may be the longer duration of turn-around time of assignments in India.

3.2.1.7 Satisfaction with feedback through TMAs

As mentioned in chapter 3, to measure the students' satisfaction with the feedback they get through written communication, a four item Likert type satisfaction scale was devised. Here in this section are reported the results pertaining to students' satisfaction with the feedback they get through tutor marked assignments.

Table 3.18 Satisfaction with feedback through TMAs

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	475	14.951	2.704	23.575
IGNOU	588	11.556	1.771	Prob. > 0.0001

The t-test comparison of students' satisfaction score is presented in table 3.18. It is found that students of FeU are significantly more satisfied with the feedback through TMAs than students of IGNOU.

If examined in the light of the finding that IGNOU and FeU do not differ significantly in the quality of feedback through TMAs, then this finding about satisfaction is quite surprising and a bit difficult to explain. Within the purview of this research it appears longer turn-around time and the gap between the actual time taken and the expected suitable time of returns of assignments is one of the main causes for the dissatisfaction of IGNOU students. As a hunch it may or may not be true, but definitely this finding raises an important research question as to what other factors than quality of feedback determine students' satisfaction in DE.

3.2.2 Feedback through Computer marked assignments

Computer Marked Assignments (CMAs) form part of a good number of courses at both the FeU and the IGNOU. Since these assignments are machine evaluated, it is expected that their turn-around time will be shorter and within the time limit desired by the students. However, as standard computer generated comments are sent to the students the quality of feedback may not be expected to be as good as that through the tutor marked assignments. Lastly, a comparison of feedback through computer marked assignments at FeU and IGNOU is expected to reveal aspects for improvement or emulation. This section presents the analysis of students' perception data relevant to verify these expectations.

3.2.2.1 Number of CMAs written

With regard to the number of computer marked assignments students write and send for evaluation in a study year, the figures in table 3.19 reveal that students of FeU on an avarage send 3 to 4 CMAs in a study year for evaluation, whereas in IGNOU they send on an avarage around 2 CMAs in the same period.

Table 3.19 Number of CMAs in a year

University	*up to 3*	*4 to 8*	*9 to 13*	*14 to 18*	*19 & above*	*Mean*	*Q3-Q1*
FeU	171	36	10	1	1	3.44	5
	78.08%	16.44%	4.57%	0.46%	0.46%		
IGNOU	259	18	4	3	0	2.47	2
	91.20%	6.34%	1.41%	1.06%	0.00%		

Frequency missing = 310 + 369 = 679

From the number of missing frequenceies it is clear that only about half of the sample reported to have been sending the CMAs for evaluation, this implies that CMAs form part of courses only in the case of around 50% active students in these universities. The data also clearly indicates more application of CMAs in FeU than in IGNOU for providing feedback to students.

3.2.2.2 Mode of Despatch of TMAs

As regards the mode of sending the computer marked assignments for evaluation, data in table 3.20 reveals that almost every student of FeU sends them by post. Only 8 students in the sample from this university report to use E-mail for this purpose. With regard to IGNOU students, 3 out of every 4 send the CMAs by post. 10% students in this university (perhaps those living in Delhi or near by it) prefer to hand them over personally and 16.4% students report to use both modes of delivery.

3.20 Mode of Despatch of CMAs

University	*By Post*	*By Hand*	*Both*	*E-mail*	*N*
FeU	137	nil.	nil.	8	145
	94.5%			5.5%	
IGNOU	229	31	51	nil.	311
	73.6%	10.0%	16.4%		

Frequency missing = 726

3.2.2.3 Turn-around time of CMAs

The computer marked assignments of more than 78% students (35,00% + 43,57%) in FeU come back to them within two weeks time, only in the case of next 18.57% students they take 16 to 25 days. At the FeU the average turn-around time of CMAs is 15.59 days. Compared to this the average turn-around time of CMAs at IGNOU is 58.86 days. It is understandable that postal department in India will take around 8 to 10 days extra time as compared to the German postal service. Even if this allowance is given to IGNOU, then its turn-around time should be about 25 days. Why and where so much delay takes place in returning the CMAs, the IGNOU must find out the causes and adopt remedial measures. For computer marked assignments three weeks turn-around time is more than desirable.

Table 3.21 Turn-around time of CMAs

University	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*36 to 45 days*	*46 & above days*	*Mean*	*Mode*
FeU	49	61	26	1	2	1	15.59	14
	35.00%	43.57%	18.57%	0.71%	1.43%	0.71%		
IGNOU	14	16	29	10	6 .	100	58.86	60
	8.00%	9.14%	16.57%	5.71%	3.43%	57.15%		

Frequency missing = 867

3.2.2.4 Suitability of Turn-around time

The impact of too long turn-around time of CMAs at the IGNOU is clearly reflected in the perceptions of students regarding its suitablity for learning at a distance. Only those 19.4% students of IGNOU, who perhaps get back the CMAs within 15 days, report the learning support through CMAs to have reached well in the expected time. A little more than 40% students report it to have been delayed, but they find it of some use. For exactly the same number of students the feedback through CMAs is too delayed to be of any use for learning. In the light of these perceptions of students, there is a clear case for IGNOU to reduce the turn-around time of CMAs in its system of instruction.

Table 3.22 Suitability of turn-around time of CMAs

Q: Do you find the learning support through CMAs to have reached you: ↓	*FeU*		*IGNOU*	
	f	*%*	*f*	*%*
1. well in expected time	104	68.9%	56	19.4%
2. delayed but of some use	37	24.5%	116	40.3%
3. too delayed to be of any use	10	6.6%	116	40.3%

Frequencies missing = 743

Regarding the FeU students we just saw that about 78% of them get back their CMAs within 15 days, still it is found that only 68.9% students say they reach well in expected time. Perhaps these 9% students are over demanding. From the data in table 3.21 it is clear that almost 98% students in FeU get back CMAs within 25 days, still 24.5% say they are delayed but of some use and 6.6% say they are too delayed to be of any use. On the basis of these findings regarding suitablity of the turn-around time of CMAs it can be safely inferred that, as compared to IGNOU, students in FeU are much more demanding and conscious about turn-around time.

3.2.2.5 Expected best turn-around time of CMAs

The students of both universities were asked to report in number of days the turn-around time of CMAs that they considered best for their planned studies. The data in this regard in table 3.23 reveals that students of FeU considered on an average 14 days as the best turn-around time of CMAs. In comparison to this IGNOU students thought an average of 21 to 23 days was the best turn-around time of CMAs for them. Thus it seems that inadvertantly the students of IGNOU give around a weeks time extra to compensate the extra time taken in postal delivery in India, otherwise students in both countries have similar expectations.

Table 3.23 Expected best turn-around time of CMAs

University	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*36 to 45 days*	*46 & above days*	*Mean*	*Mode*
FeU	56 38.36%	56 38.36%	27 18.49%	3 2.05%	3 2.05%	1 0.68%	14.61	14
IGNOU	48 19.35%	62 25.00%	82 33.06%	37 14.92%	12 4.84%	7 1.61%	23.36	21

3.2.2.6 Quality of feedback through CMAs

To study the quality of feedback to students through CMAs, the same six questions designed to study the quality of feedback through TMAs were asked to the respondents in the two universities. They were to read each quality asked in the question and decide for themselves if it was present in the feedback they were getting through the CMAs and respond if it was (i) always, (ii) sometimes, or (iii) never present in the feedback they were getting. This section presents the Mann-Whitney U Test results, comparing the quality of feedback through CMAs at FeU and IGNOU, along with the frequencies and percentages of students' response under each response category.

The results pertaining to the quality **Regularity of feedback through CMAs** in table 3.24 reveal a statistically significant difference between FeU and IGNOU.

Table 3.24 Regularity of feedback through CMAs

Q: Do the replies to your CMAs come back at regular intervals in the sequence you sent them?

Response ➔ University ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	159	98	54	7	
		61.64%	33.96%	4.40%	10.067
IGNOU	306	69	94	143	Prob. > 0.0001
		22.55%	30:72%	46.73%	

Specifically it is found that the feedback through CMAs is significantly more regular at FeU, as 61.64% of its students always find the replies to their CMAs to come back at regular intervals in the same sequence they despatched them for evaluation, whereas this happens in the case of only 22.55% students of IGNOU. Although almost every third student in both universites says that only sometimes these replies are regular, the number of students saying that replies are never regular and sequential is much more higher in IGNOU (46.73%) than FeU (4.40%). How much irregular and unsequential is the supply of the CMAs in these universities? It is a difficult question to answer, as it was beyond the purview of this study. However, it is clear that an unsequential and irregular return of assignments coupled with undue delay (which is definitely the case in IGNOU) may cause confusion to the student and feedback may loose the very purpose for which it was supplied. This finding once again reflects the lacunae in either the despatch policy or the handling of CMAs at the IGNOU.

With regard to the quality, whether the feedback through CMAs is **Explanatory rather than judgemental** two questions were asked. The responses to the first question in table 3.25 reveal a significant difference between FeU and IGNOU. In particular the computer comments generated at FeU are always found by almost every third student (29.49%) to explain her/him in detail the causes of their mistakes and give information and suggestions needed by them to correct their mistakes, but this is the case only for 13,33% IGNOU students.

Table 3.25 Explanatory nature of feedback through CMAs

Q: Do the computer comments explain in detail the causes of your mistakes and give information and suggestions needed to correct your mistakes?

Response ➔ *University* ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	156	46 29.49%	67 42.95%	43 27.56%	7.411
IGNOU	285	38 13.33%	59 20.70%	188 65.96%	Prob. > 0.001

As compared to FeU's 27.56% students, 65.96% students in IGNOU never find the computer generated comments to be explanatory in nature i.e. they neither explain in details the causes of mistakes nor supply information and suggestions sufficient enough to correct their mistakes.

In response to the question, whether the computer generated replies are simply judgemental in nature, again the perceptions of students in both universities differ significantly, but the trend of response is quite contrasting. For example, almost every second student of FeU (48.08%) always finds the computer generated comments to be judgemental in nature, but in IGNOU almost every second student never finds them to judgemental. From this finding it can be inferred that perhaps in the FeU computer has been programmed to also provide an assessment of students' performance besides generating instructional comments.

Table 3.26 Judgemental nature of feedback through CMAs

Q: Or you find these replies/comments to be judgemental i.e. simply pointing out mistakes?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	156	75	55	26	
		48.08%	35.26%	16.66%	5.995
IGNOU	245	67	61	117	Prob. > 0.0001
		27.35%	24.90%	47.75%	

If the findings pertaining to IGNOU in table 3.25 and 3.26 are together considered then one finds that more than 50% students do not find the computer generated feedback to be explanatory and alomost the same number of students find it also to be not judgemental in nature. This reflects that presently the proper use of this machine is not being made to evaluate the CMAs, in the sense that it should be programmed to generate both explanatory and judgemental comments. With the development of advanced programming languages, today we are forging towards the era of artificial intelligence, the computer offers enormous possibilities. The need is to properely programme it. And it appears that the IGNOU's computer programme presently used for evaluating students' assignments requires a modification and perhaps an upgrading.

The results in table 3.27 reveal that students of the two universities differ significantly in their perceptions about the **conciseness of feedback through CMAs**.

Table 3.27 Conciseness of Feedback through CMAs

Q: Are these comments/replies concise i.e. giving to the point information needed to correct your mistakes/doubts?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	153	70	65	18	
		45.75%	42.48%	11.76%	7.789
IGNOU	252	56	61	135	Prob. > 0.0001
		22.22%	24.21%	53.57%	

Specifically it is found that the computer generated comments at the FeU are significantly more **concise** i.e. to 45.75% students they 'always' and to 42.48% students they 'sometimes' give to the point information which is needed by them to correct their learning doubts, but such 'always' happens only in the case of 22.22% and 'sometimes' happens in the case of 24.21% IGNOU students. The failure of IGNOU's computer in generating concise feedback through CMAs is clearly reflected by the fact that every second active student of this university never finds these coments to be giving to the point concise information which is needed by the students to correct their learning doubts.

In response to the question 'whether the feedback through the CMAs is perceived by the students of these universities to be having the quality of **clarity**' the data in table 3.28 reveals a significant difference between them. The results specifically reveal that the computer generated replies of the FeU are significantly more clear and non-confusing than those of the IGNOU.

Table 3.28 Clarity of Feedback through CMAs

Q: Do you find these comments/replies to be clear i.e. free from difficulties and confusions?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	154	79	63	12	
		51.30%	40.91%	7.79%	9.566
IGNOU	251	43	76	132	Prob. > 0.0001
		17.13%	30.28%	52.59%	

As compared to 51.30% FeU students, only 17.13% students in IGNOU always find the computer generated replies to be clear i.e. free from difficulties and confusions. It is also surprising to find that every second (52.59%) student in IGNOU reports that the computer generated comments are never clear, which implies that they are either difficult or confusing to understand. This again reflects the weaknesses of the computer programme at IGNOU in this regard.

How far are the computer generated replies sent in response to their assignments being perceived by the students to be **facilitating** their independent learning? The results of this study in this regard, presented in table 3.29, reveal a significant difference between the perceptions of students from both univeristies.

The feedback through CMAs at the FeU is significantly more facilitative than at the IGNOU. In the FeU it is always facilitating for 34.19% students and sometimes facilitating for 49.68% students, whereas this is respectively the case only for 21.35% and 22.71% students in IGNOU. Lastly, as compared to 16.13% FeU students, 55.78% students never find these computer generated comments to be facilitating their learning by removing their learning doubts. This again reflects the failure of computer marked assignments at IGNOU in providing good quality feedback to its every second student.

Table 3.29 Facilitativeness of Feedback through CMAs

Q: Do you find these comments/replies to be facilitative i.e. they make learning easy by removing your learning doubts?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	155	53	77	25	
		34.19%	49.68%	16.13%	6.634
IGNOU	251	54	57	140	Prob. > 0.0001
		21.51%	22.71%	55.78%	

In addition to comparing the two universities on the six qualities individually, the overall quality of feedback through CMAs in these universities was also compared. As expected, in the light of the above findings, the results in table 3.30 reveal that the overall quality of feedback through CMAs was significantly better at the FernUniversität.

Table 3.30 Overall quality of feedback through CMAs

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	145	38384.0	264.71	9.977
IGNOU	239	35536.0	148.68	Prob. > = 0.0001

Putting together the results of the analysis in this section it is found that, compared to IGNOU, the feedback through CMAs at the FeU is significantly more regular, explanatory and judgemental, concise, clear and more facilitative and that on the whole also the FeU is significantly better than IGNOU in providing its students qualitatively good feedback through CMAs. Two reasons seem to be responsible for FeU's superiority: (i) the FeU, being almost 10 year older than IGNOU, has a much longer experience in handling CMAs; and (ii) the FeU has a strong backing of Research and Development through Zentrum Für Fernstudienentwicklung (ZFE - Centre for the Development of Distance Education), which has worked over the years to develop intelligent computer programmes for evaluating the CMAs. The IGNOU which has relatively recently introduced the CMAs has to really go a long way to come up to the qualitative effectiveness of FeU in this department of distance education.

3.2.2.7 Cost-effectiveness of feedback through CMAs

Based on the analogous argument adopted for studying the cost-effectiveness of the feedback through TMAs (refer section 3.2.1.6), the cost-effectiveness of CMAs was studied through the perceptions of the students in the two universities. They were asked a direct question, in response to it the students had to decide for themselves if they, on the whole, (i) always, (ii) sometimes, or (iii) never found it to be a cost-effective use of the money they spent to get the feedback through the Computer Marked Assignments.

The Mann-Whitney U Test comparison of students' responses in table 3.31 revealed a significant difference in the perceptions of students belonging to the two universities. The feedback through CMAs was perceived to be more cost-effective by the FeU students.

Table 3.31 Cost-effectiveness of Feedback through CMAs

Q: On the whole, how often you find it to be a cost-effective use of the money you spent to get feedback through computer marked assignments?

Response ➔ *University* 🡻	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	148	84	54	10	
		56.76%	36.49%	6.76%	7.235
IGNOU	256	61	122	73	Prob. > 0.0001
		23.83%	47.66%	28.52%	

This finding is quite as expected, if examined in the light of the findings pertainig to the quailty of feedback through CMAs in both universities. Besides the quality, perhaps the other pertinent reason for this result lies in the longer and unsuitable turn-around time of CMAs and the more direct cost involved in their postage in India. It is really a matter of more systematic inquiry as to what makes the CMAs more cost-effective in different DE institutions.

3.2.2.8 Satisfaction with feedback through CMAs

When the feedback through CMAs has been perceived by the FeU students as more qualitative and cost-effective, it was quite natural to expect that FeU students will be significantly more satisfied then the IGNOU students.

Table 3.32 Satisfaction with feedback through CMAs

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	82	14.719	3.084	8.322
IGNOU	301	11.717	2.059	Prob. >0.0001

The results pertaining to students' satisfaction with feedback they get through CMAs in table 3.32 confirms this expectation. This finding implies that if a sub-system of distance education is rendering a qualitative support service perceived to be cost-effective by the students then it will lead to better students' satisfaction, which in turn might have positive cosequences for learning at a distance.

3.2.3 Feedback through Personal correspondence

In distance education actual non-contiguous written two-way communication between the student and those at the teaching end starts after the corrected and commented assignments have been received by the student and when she/he writes back to the tutor/teacher to seek clarifications on points or issues which still perplex her/him. This communication loop ends when the tutor/teacher writes back the clarifications to the student. Another communication loop may start if the student still has doubts and writes back for further clarifications. This is what has been called 'instructive correspondence' by Anand (1979) and that has been referred to as **Personal Correspondence (PC)** in this study. The objective 1.3 of this study was concerned with the study and comparison of the quality of feedback which the students get through the personal correspondence which they initiate with this intention. In this section are presented the findings of this study pertaining to this objective.

3.2.3.1 Number of Personal letters written

How many personal letters do you write to your tutors/teachers in one study year? In response to this question, figures in table 3.33 reveal that 60.86% FeU and 54.21% IGNOU students report that they write personal letters to their tutors/teachers. Of these, more than 80% students in both univeristies write on an average 3 to 4 letters with a modal number of two letters by the FeU students and one letter by the IGNOU students.

Table 3.33 Number of Personal letters in a year

University	*N*	*up to 3*	*4 to 8*	*9 to 13*	*14 to 18*	*above 19*	*Me & Mo*
FeU	322	261	41	11	3	6	4.13
	60.86%	81.06%	12.73%	3.42%	0.93%	1.86%	2
IGNOU	354	298	38	13	2	3	3.82
	54.21%	84.30%	10.76%	3.59%	0.45%	0.90%	1

Frequency missing = 637

More than 10% students in both universities write between 4 to 8 letters in a year. It is worth noting that there are students in both universities who even write more than 19 letters.

3.2.3.2 Mode of despatch

With regard to the mode of despatch of personal correspondence, all the students of IGNOU use the postal services for personally interacting in writing with their tutors/teachers. As compared to this only 69.1% students of FeU use the postal mode for this purpose.

Table 3.34 Mode of Despatch

University	*By Post*	*Fax*	*E-Mail*	*Both*	*N*
FeU	188	39	16	29	272
	69.1%	14.3%	5.9%	10.6%	
IGNOU	337	nil	nil	nil	337
	100%				

Frequency missing = 673

Of the rest, 14.3% prefer Fax, 5.9% use E-Mail and 10.6% prefer to use both Fax and E-Mail according to their convenience. Thus, a little more than 30% students in FeU use the telecommunication services through telephone or computer to correspond with their tutors/teachers. This difference in the use of telecommunication services between IGNOU and FeU students is due to the fact that these services are still very expensive and also beyond the reach of a common person in India.

3.2.3.3 Turn-around time of PC

The results in table 3.35 reveal that 66.67% of those students in FeU who write personal letters to their staff get back the replies within 5 days. This finding really speaks of the efficiency of both the staff at the FeU and the postal services in Germany. In Germany normally a letter is delivered by post on the next day of its posting. Of course in these figures are included those 30% students who use Fax or E-Mail, naturally the reply to them, if the tutor/teacher is on the line, will perhaps be on the same day, if not immediate. Any way it is commendable.

Table 3.35 Turn-around time of PC

University	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*36 to 45 days*	*46 & above days*	*Mean*	*Mode*
FeU	146	44	17	2	4	6	13.22	10
	66.67%	20.09%	7.76%	0.91%	1.83%	2.74%		
IGNOU	43	50	47	12	6	16	24.04	25
	24.71%	28.74%	27.01%	6.90%	3.44%	9.19%		

Frequency missing = 789

As compared to the FeU figures, though only 24.71% IGNOU students get replies within 5 days but it is also commendable in the sense that it reflects promptness on the part of those replying these letters. Even if it is assumed that these many letters are written locally (within the same city), reply within 5 days in India is possible only when it has been written the same day the letter was received, because at least one day will be taken in the university's despatch section and a minimum of 3 to 4 days are needed by the postal department for delivering it at both ends. Another notable difference between the two universites is in the average turn-around time of these replies, which is around two weeks in FeU and a little more than three weeks in IGNOU. This difference of about a week can be attributed to the poor postal services in India.

3.2.3.4 Suitability of turn-around time of PC

With regard to the suitability of the turn-around time of replies to personal letters, it is found that in the FeU exactly 81% students find the learning support through the personal correspondece to have reached them well in the expected time; compared to only 29.4% students in IGNOU who have this feeling. As compared to 15.4% students in FeU, 42.2% students in IGNOU find the replies to their personal queries to be coming late but still of some academic use.

Table 3.36 Suitability of turn-around time of PC

Q: Do you find the learning support through PC to have reached you: ↓	*FeU*		*IGNOU*	
	f	%	*f*	%
1. well in expected time	205	81.0%	64	29.4%
2. delayed but of some use	39	15.4%	92	42.2%
3. too delayed to be of any use	9	3.6%	62	28.4%

Frequencies missing = 711

But compared to only 3.6% students in FeU, more than 28.4% students in IGNOU find these replies to be too delayed to be of any use in their learning as a distance student. This means that for more than every fourth student in IGNOU personal correspondence is not providing useful feedback. This is quite a big number, hence IGNOU must try to ensure a reasonable turn-around time of the replies to the personal queries of these students. The students' expectations about the best turn-around time of these replies examined in the following section should serve as the guiding parameter of time limit in this regard.

3.2.3.5 Expected best turn-around time of PC

If the results pertaining to the best turn-around time, expected by the students, of replies to their personal queries in table 3.37 are examined in the light of the above findings pertaining to the present turn-around time and its suitability (refer tables 3.35 and 3.36) then 5 days expectation by 67.15% students in FeU and by 34.46% students in IGNOU is certainly not an over-expectation. However, important from the point of view of instructional management in these institutions is the average expected turn-around time of these replies. The students of FeU want on an average 10 days (majority preference is 14 days) and the students of IGNOU want 16 days (majority preference being 15 days).

Table 3.37 Expected best turn-around time of PC

University	*N*	*up to 5 days*	*6 to 15 days*	*16 to 25 days*	*26 to 35 days*	*Mean*	*Mode*
FeU	207	139 67.15%	54 26.09%	12 5.80%	1 0.48%	9.97	14
IGNOU	177	61 34.46%	74 41.81%	37 20.90%	5 2.82%	16.48	15

Frequency missing = 798

If interpreted in the light of the efficiency of the postal services in the two countries, the expectations of the students' in the two universities about the best turn-around time of replies to their personal letters do not seem to differ significantly. And they are also within a manageable time limit provided those writing the replies do not take undue time.

3.2.3.6 Quality of Feedback through Personal Correspondence

To study the quality of feedback that students got in response to the Personal Correspondece (PC) initiated by them, the same six questions designed to study the quality of feedback through TMAs were asked to the respondents in the two universities. They were to read each quality asked in the question and decide for themselves if it was present in the feedback they were getting from their tutors/teachers in response to their personal queries, and respond if it was (i) always, (ii) sometimes, or (iii) never present in the feedback they were getting. This section presents the Mann-Whitney U Test results, comparing the quality of feedback during the exchange of personal letters at FeU and IGNOU, along with the frequencies and percentages of students' responses under each response category.

If the replies to students' personal letters which they wrote to seek clarifications from their tutors/teachers after receiving from them their corrected and commented assignments were coming back at regular intervals in the same sequence they posted them, then the feedback through PC was considered to have the quality, referred to in this study as, **regularity**. The students' responses in table 3.38 reveal that in the FeU almost every second (52.32%) student always regularly got sequential reply to her/his personal letters. As compared to FeU, this was the case only for about every third (36.96%) student in IGNOU. The number of students reporting that they only sometimes got regular and sequential replies was found to be about 10% less in the case of FeU. Whereas in FeU almost every eighth (12.58%) student reported that she/he never got a sequential and regular reply, in IGNOU this was the case for almost every fourth (23.02%) student.

Table 3.38 Regularity of feedback through PC

Q: Do the replies to your personal letters come back at regular intervals in the sequence you sent them?

Response ➔ *University* ➘	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	151	79	53	19	
		52.32%	35.10%	12.58%	3.344
IGNOU	252	93	101	58	Prob. > 0.0008
		36.90%	40.08%	23.02%	

As these differences were found to be statistically significant, it can safely be interpreted that, as compared to IGNOU, students' personal letters are being replied more regularly and sequentially by the staff at FeU and that the feedback in response to student initiated correspondence is significantly more regular at the FeU than at IGNOU.

Before making further interpretations about the quality of feedback students get in response to queries they make through personal letters to their tutor/teacher, it becomes essential to point out that as more probing questions in this regard were asked, a majority of students abstained from replying them. This number of students who refrained was particularly very large in the case of FeU. For example, from the 322 students of FeU who responded to have written personal letters (refer table 3.33) dropped gradually to 56, who answered all questions in this section. In the case of IGNOU also the number dropped, but it was not so serious. Here out of the 354 students who responded in the beginning, 225 students on an average answered all further questions regarding the quality of feedback they got from their tutor/teacher in response to their personal letters of query. There may be two possible reasons for this sharp drop-out: either (i) the drop-outs perhaps misinterpreted the question asked in the beginning pertaining to the number of personal letters they wrote in the foregone study year. It seems even those students answered in response to this question who wrote any type of personal letter. Later realising that letters being referred to in further sections of the questionnaire are concerned with only tutorial inquiry (which perhaps they never made), they refrained from answering further questions; or (ii) more students of FeU than IGNOU refrained because, perhaps, they did not want to answer questions that might reflect their opinion about their tutors/teachers.

If the second explanation is true, then it simply reflects the societal differences in the sense that students in India seem to be more critical or outspoken than students in Germany. But if the first is true, then it reveals less initiation of non-contiguous two-way communication through written correspondence after receiving the assignments by the FeU students. The reasons for this, though a matter of further inquiry, could be that the replies to assignments at the FeU are good enough to leave no room for further inquiry, or the students of FeU prefer to use telephone conversation (a possibility readily available at FeU) than writing letters. The validity of the later statement will be possible to judge when the qualitiy of feedback through electronic media is examined later in section 3.4 of this report.

This note of caution was drawn with the intention to point out that further findings in this section should be interpreted in the light of the significant reduction in the number of subjects responding to further questions probing into the quality of feedback through the replies to student initiated personal correspondence. Since the Mann-Whitney U Test (a non-parametric test) has been applied to compare the perceptions of students in the two universities, the significant drop-out, however, should not affect the validity of interpretations.

Whether the feedback in the form of replies to students' personal letters is **explanatory** in nature i.e. the replies explain in detail the causes of students' mistakes and give them information and suggestions needed to correct themselves. The results in table 3.39 reveal a significant difference in the perceptions of students from the two universities.

Table 3.39 Explanatory nature of feedback through PC

Q: Do these replies explain in detail the causes of your mistakes and give information and suggestions needed to correct your mistakes?

Response ➔ *University* 🡻	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	68	44 64.71%	19 27.94%	5 7.35%	5.378
IGNOU	229	65 28.38%	106 46.29%	58 25.33%	Prob. > 0.0001

The replies written by the tutors/teachers at the FeU are significantly more explanatory than those written by the staff at IGNOU. Specifically it was found that, as compared to IGNOU's 28.38% students, 64.71% students in FeU always found the replies from their staff to be explanatory in nature. While in FeU only 27.94% students reported that the replies were only 'sometimes' explanatory, this was the perception of 46.29% students in IGNOU.

In IGNOU, from those students who responded to this question, every fourth (25.33%) student finds that the replies to their personal queries from tutorial staff are never explanatory in nature. But such is the perception of every thirteenth student in FeU.

The findings in table 3.40 reveal that the feedback in the form tutor/teacher's replies to personal letters is perceived to be significantly more **judgemental** in nature by the students of IGNOU.

Table 3.40 Judgemental nature of feedback through PC

Q: Or you find these replies to your letters to be judgemental i.e. simply pointing out mistakes?

Response ➔ *University* ➘	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	56	9	19	28	
		16.07%	33.93%	50.00%	-2.561
IGNOU	219	60	89	70	Prob. > 0.0104
		27.40%	40.64%	31.96%	

Specifically it is found that, as compared to every second student of FeU, almost every third student (31.96%) in IGNOU perceives the tutorial replies to be 'never' judgemental in nature. As compared to this, against 27.40% students in IGNOU, only 16.07% students in FeU report the replies to be always judgemental i.e. simply pointing out mistakes. On the basis of these findings it can be concluded that as compared to IGNOU, tutors/teachers in the FeU take more care in responding to personal letters of students and that they write more explanatory rather than judgemental replies. However, this conclusion about FeU cannot be taken as a generalisation, as only 56 students from a sample of 529 have responded to this question.

With regard to the quality **conciseness** of feedback, the findings in table 3.41 again reveal a significant difference in the perceptions of students from both universities. The students of FeU perceive the replies written by their tutors/teachers to be more concise than the students of IGNOU. Specifically it was found that, as against every third student (33.33%) in IGNOU, every second (55.36%) student in FeU always finds the replies to her/his personal letters to be concise i.e. always giving to the point information. Such a concise reply never comes in the case of every fifth IGNOU student, as against every twentieth FeU student.

Table 3.41 Conciseness of Feedback through PC

Q: Are the replies to your letters concise i.e.giving to the point information needed to correct your mistakes/doubts?

Response ➔		*Always*	*Sometimes*	*Never*	*Mann-Whitney*
University ⬇	*N*				*z-score*
FeU	56	31	22	3	
		55.36%	39.29%	5.36%	3.418
IGNOU	225	75	106	44	Prob. > 0.0006
		33.33%	47.11%	19.56%	

As compared to 34.39% students in IGNOU, the replies to personal letters of querry from the tutors are always having the quality of **clarity** in the case of 61.11% FeU students. While the number of students finding these replies to be only 'sometimes' clear is almost equal in both universities, there is a significant difference in the number of those students who report that these replies are never having the quality of clarity in them. For example, as compared to every twentieth student (5,56%) of FeU, every fourth student (25.79%) of IGNOU never finds the replies to her/his personal letters to be free from difficulties and confusions.

Table 3.42 Clarity of Feedback through PC

Q: Do you find the replies to your letters to be clear i.e. free from difficulties and confusions?

Response ➔		*Always*	*Sometimes*	*Never*	*Mann-Whitney*
University ⬇	*N*				*z-score*
FeU	54	33	18	3	
		61.11%	33.33%	5.56%	4.041
IGNOU	221	76	88	57	Prob. > 0.0001
		34.39%	39.82%	25.79%	

On the basis of above results in table 3.42 which reveal a significant difference in the perceptions of FeU and IGNOU students, it can safely be interpreted that, as compared to IGNOU, replies to personal queries of students written by the FeU staff provide significantly clear feedback to students i.e. the replies are free from difficulties and confusions.

Regarding the **facilitativeness** of feedback through personal correspondence, the results in table 3.43 also reveal a significant difference in the perceptions of students in the two universities. The students of FeU find the replies to their personal letters of querry to be significantly more facilitative, as compared to the students of IGNOU. Specifically as compared to every thirty-third (3.57%) student in FeU, more than every fourth (27.68%) student in IGNOU never finds these tutorial replies to facilitate her/his learning by removing learning doubts.

Table 3.43 Facilitativeness of Feedback through PC

Q: Do you find the replies to your letters to be facilitative i.e. they make learning easy by removing your learning doubts?

Response ➔ *University* ➔	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	56	33	21	2	
		58.93%	37.50%	3.57%	3.322
IGNOU	224	93	69	62	Prob. > 0.0009
		41.52%	30.80%	27.68%	

In addition to comparing the two universities on the six qualities individually, the overall quality of feedback through personal correspondence in these universities was also compared. As expected, in the light of the above findings, the results in table 3.44 reveal that the overall quality of feedback in response to the student initiated correspondence is significantly better at the FeU.

Table 3.44 Overall quality of feedback through PC

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	49	8251.0	168.387	3.796
IGNOU	213	26202.0	123.014	Prob. > = 0.0001

Putting together the results of the analysis in this section it is found that, compared to IGNOU, the feedback through personal correspondence at the FeU is significantly more regular, explanatory rather than judgemental, concise, clear and more facilitative. And that on the whole also the FeU is significantly better than IGNOU in providing its students qualitatively good feedback in the form of replies to their personal queries.

3.2.3.7 Cost-effectiveness of feedback through PC

Based on the analogous argument adopted for studying the cost-effectiveness of the feedback through TMAs (refer section 3.2.1.6), the cost-effectiveness of feedback through PC was studied through the perceptions of the students in the two universities. They were asked a direct question, in response to it the students had to decide for themselves if they, on the whole, (i) always, (ii) sometimes, or (iii) never found it to be a cost-effective use of the money they spent to get the feedback by writing personal letters of query to their tutor/teacher of their university.

The results in table 3.45, comparing students' perceptions regarding the cost-effectiveness of feedback they get in response to their personal letters, reveal a significant difference between the two universities.

Specifically, as compared to the students of IGNOU, the students of the FeU, on the whole, find it to be a signficantly more cost-effective use of the money they spent to get feedback for learning through writing personal letters to their tutors/teachers. This finding, if examined in the light of the quality of feedback the students get in response to their queries, is quite as expected.

Table 3.45 Cost-effectiveness of Feedback through PC

Q: On the whole, how often you find it to be a cost-effective use of the money you spent to get feedback through personal correspondence?

Response ➔ *University* ↓	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	55	40	12	3	
		72.73%	21.82%	5.45%	5.101
IGNOU	231	79	100	52	Prob. > 0.0001
		34.20%	43.29%	22.51%	

3.2.3.8 Satisfaction with feedback through PC

With regard to the satisfaction of students with the feedback they get in response to the personal correspondence they initiate, the T-test comparison of the satisfaction scores on the four item Likert scale in table 3.46 reveals a highly significant difference between the students of the two universities. The students of FeU are significantly more satisfied than the students of IGNOU.

Table 3.46 Satisfaction with feedback through PC

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	54	16.60	2.753	11.529
IGNOU	215	11.41	2.019	Prob. >0.0001

The results in this section reveal that, as compared to IGNOU, students at FeU get qualitatively better feedback from their tutors/teachers in response to the personal letters they write in this regard. Not only the turn-around time of tutor replies at the FeU is shorter but it is quite near the expectations of its students. Perhaps because of the better quality and shorter turn-around time the students of FeU not only find this feedback to be cost-effective but they are also significantly more satisfied with it. Although these conclusions about FeU are based on the response of only 56 students and thus difficult to generalise, nonetheless, the comparison done here reflects a need for introspection on the part of IGNOU. The fact that in IGNOU a large number of students initiate personal correspondence, clearly reveals that a large number of its students need further tutoring, hence this university must probe into this aspect and ensure qualitative and timely feedback in response to students queries, in addition to returning the evaluated and commented students' assignments well within the time limit expected to be the best for their planned studies by the students.

3.2.4 Relative Quality of Feedback through Written Correspondence

So far we have examined the quality of feedback through three forms of written correspondence i.e. Tutor Marked Assignments (TMA), Computer Marked Assignmets (CMA) and Personal Correspondence (PC). Is the feedback through these three forms of correspondence qualitatively the same or does it differ from each other? This is an important question from the point of both theory and practice in distance education. Research so far provides an indirect and inconclusive answer to this question.

For example, though the classical studies by Bååth & Mansson (1977) and Bååth (1980) provide experimental evidence to reveal that the computerised postal tuition was taken more positively by the students than the traditional tutorial tuition. And that students getting computer generated correspondence tuition started submitting assignments to a greater extent than students receiving traditional tuition. In one of the experimental settings of this study, they also completed their studies to a greater extent taking a shorter duration of time. But these studies fail to provide direct evidence about the relative quality of feedback through tutorial tuition and computerised tuition.

Similarly the extensive review of studies conducted up to 1982 in the area of non-contiguous tutorial two-way communication in distance education by Holmberg (1982a & b) also does not report any study that directly answers this question. The other studies in this area not reported in Holmberg's review have focused on a wide variety of issues related to Tutor Marked Assignments (TMAs) and Computer Marked Assignments (CMAs). For example, Bernard (1976) reported the utility of extending the TMAs by supplying a contact report sheet giving extended ideas, comments critics, suggestions and raising questions etc. on essays written by students in a Art course in literature. The students report indicated that they received the report sheet as positively contributing to their learning at a distance. A number of other studies (Mackenzie, 1976; Tyagi & Sahoo, 1992; Rathore, 1993) analysed students' reactions to the tutor comments on their TMAs. Although in these studies only the individual voices of students were reflected on issues such as: (i) teaching value of TMAs; (ii) difficulties or drawbacks of TMAs; (iii) the kinds of comments considered to be useful for learning at a distance; (iv) on the issues of turn-around time; and (v) possible improvements or developments, they nonetheless revealed that tutor's comments on the assignments are valued by all the students as means of learning, and that any resource devoted towards improving the efficiency of TMAs will therefore be well invested. The turn-around time of TMAs has been the extensive subject of the studies by Rekkedal (1973) and Rathore (1993). Both studies revealed the value of shorter duration of turn-around time of TMAs in learning at a distance.

In addition to the tutor marked assignments some research attention has been also paid to the development and evaluation of Computer Marked Assignments (CMAs), as they serve much quicker and less expensive way of postal two-way tutorial communication in DE. Perhaps the experimental study by Bååth (1980), quoted above, paved the way for the application of CMAs in DE for tutorial purpose. For example, Holmberg (1982a) reports the use of computer for correcting, marking and commenting upon students' assignments at Hermods, Sweden. An almost similar computer system, that also allows free rendering of free responses in the form of numbers, called LOTSE and CMA have been developed and widely used at the FernUniverstät, Germany. In these systems the numbers are read by the computer, not by mark sensing but by the numbers being produced through markings in columns of numbers provided. Thus there is no choice between different solutions suggested. The students create their own answers (numbers). The advantage of this system is that the students cannot guess the answer from the distractors - a possibility in the multiple-choice format (Graff 1977; Möllers 1981).

Similar use of CMAs has been reported by Brittain (1973), Lambert (1977), and Lampikoski & Mantere (1976) in the United States and by Singh (1996) at IGNOU in India. Most of these studies support to a great extent the contention that computer marked assignments lead to better completion rates and they exert favourable influence on students' attitudes to tutorial work, but they fail to provide concrete evidence about the quality of feedback that students get through them.

This positive view of off-line computers, according to Holmberg (1982a), ''can hardly be interpreted as a general recommendation to do without tutor marked assignments or personal non-contiguous communication generally. A number of subjects, themes within subjects and general type of learning, e.g. free problem oriented learning, makes it imperative that live tutors communicate with students.'' In fact real non-contiguous two-way communication in DE starts after the commented assignments have been received by the students and when they write back to the tutor to seek clarifications on points or issues which perplex them and the tutor writes back the clarifications. This is what has been called as 'instructive correspondence' in distance education by Anand (1979) and has been referred to as 'Personal Correspondence' in this study.

Unfortunately no study could be located that has inquired about the quality of feedback to distance education through the Personal Correspondence the students initiate with their tutors/teachers.

This brief review of studies in the area of non-contiguous written communication for providing feedback to students in distance education, reveals that neither the quality of feedback to students, nor their satisfaction with it, nor the cost-effectiveness of the feedback they get, has been so far systematically investigated.

Since the previous studies indirectly reflect that TMAs and CMAs have almost similar postive influence on students in terms of better completion rate and favourable attitudes to tutorial work, **it is expected in this study that students perceptions about the quality of feedback through TMAs and CMAs will not differ significantly**. Hence it is also expected that feedback through TMAs and CMAs will be perceived by the students to be equally cost-effective and that they will be equally satisfied with this feedback. **But as the feedback through personal correspondence initiated by the student will be highly personalized and specific, it is expected that the quality of feedback through it will be perceived to be better than that through TMAs and CMAs.** Consequently feedback through Personal correspondence will be perceived by the students to be more satisfying and cost-effective than the feedback through TMAs and CMAs.

In this study, as the data pertaining to the quality of feedback through TMAs, CMAs and Personal Correspondence (PC) was collected through common items in the questionaire, it became possible to study the relative quality of feedback through them. In the foregone sections 3.2.1, 3.2.2, and 3.2.3 the six qualities of feedback through TMAs, CMAs, and PC were individually reported and compared between FeU and IGNOU. Here in this section the overall quality of feedback through TMAs, CMAs, and PC are compared with each other, with the intention to specifically know which of these feedback strategies is perceived by the students to be providing them the best quality feedback with what satisfaction and cost-effectiveness. Hence the results in this section will provide an empirical answer, in terms of students perceptions, to the question that was posed in the beginning i.e. "Is the feedback through the three forms of written correspondence in DE qualitatively the same or not"?

In order to compare the relative quality of feedback through TMAs, CMAs and PC One-way Analysis of Variance (ANOVA) test was applied to compare the overall quality scores which were obtained by pooling the frequencies scored as 3 = always, 2 = sometimes, and 1 = never for each of the six quality dimesions of the three feedback strategies. Where ANOVA yielded a significant F-value, Duncan's Multiple Range Test was applied to test specific significant differences between the three feedback strategies, as it was considered to be more robust than the T-test in taking care of the alpha level in such comparisons. This analysis was done and is reported separately for FeU and IGNOU, as the application of General Linear Models Procedure revealed a significant interaction effect of the institutions with the quality of feedback.

3.2.4.1 Relative Quality at FeU

The analysis pertaining to the relative quality of feedback through TMAs, CMAs and PC at the **FeU** in table 3.47 reveals a significant F-Value, which implies that the quality of feedback from the three strategies have been differently perceived by the students of FeU.

The application of Duncan's Multiple Range Test, for making a pairwise comparison of the quality of feedback through TMAs, CMAs and PC in table 3.48 reveals a significant difference in the FeU students' perceptions regarding the quality of feedback they are getting through these feedback strategies adopted at FeU.

Table 3.47 ANOVA for total quality of feedback through TMA, CMA and PC at FeU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	128.4899	64.1449	15.84	0.0001
Within	629	2551.7199	4.0560		

Specifically the FeU students perceive to get qualitatively the best feedback through the personal correspondence that they initiate with their tutor/teacher responsible for the course. This finding supports the expectation of this study that feedback through personal correspondence, being highly personalized and specific to the specific learning problems of the students, will be perceived by the students to be significantly more qualitative than feedback through both Tutor Marked and Computer Marked Assignments.

Table 3.48 Duncan's Multiple Range Test for TMA, CMA, and PC

Note: This test controls the type I comparisonwise error rate
Alpha= 0.05 df= 629
Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*438*	*13.066*	*A*
CMA	*145*	*13.834*	*B*
PC	*49*	*14.449*	*C*

Regarding the relative quality of feedback through TMAs and CMAs, it was expected that students perceptions will not differ significantly. And even if they differ than feedback through TMAs should be perceived to provide more qualitative feedback, as tutor's are expected to write more personalized comments and suggestions than the computer. But surprisingly, the students of FeU report to get significantly more qualitative feedback through Computer Marked Assignments than through their Tutor Marked Assignments. Thus it appears that the tutors at the FernUniversität are probably not giving the students the input that students really expect from them in response to their assignments.

In distance education, if the computers are doing a better job of tutoring the students than the living tutors, then the belief of Holmberg (1982) that "this positive view of computers can hardly be interpreted as a general recommendation to do without tutor-marked assignments or personal non-contiguous communication" is false as far as the former are concerned. Instead the finding of this study not only corroborates the experimental findings of Bååth (1980) regarding the use of computer-marked assignments for tutoring in distance education, but it also supports Peter's (1973) view of ' industrialisation of distance education' (also refer Keegan 1994). In the near future, when computers are 'Artificially Intelligent' and more advanced programming languages are developed, it may not be a big wonder that the tutorial function in DE is rationally taken up by the computer, as it will take care of many of the weaknesses associated with the tutor-marked assignments.

3.2.4.2 Relative Cost-effectiveness at FeU

The ANOVA results in table 3.49, comparing the perceptions of FeU students about the cost-effectiveness of the feedback they get through TMAs, CMAs and PC, reveal a significant F-value. Which means the cost-effectiveness of feedback through these three forms of written correspondence differs significantly from each other.

Table 3.49 Relative cost-effectiveness of feedback through TMA, CMA and PC at FeU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	5.0393	2.5196	6.37	0.0018
Within	639	252.5806	0.3952		

The Duncan's Multiple Range Test results in table 3.50, making a pairwise comparison of cost-effectiveness of feedback through TMAs, CMAs and PC, reveal that feedback through Personal Correspondence (PC) is significantly more cost-effective than the feedback through both the Tutor-Marked Assignments and the Computer-Marked Assignments. The feedback through TMAs and CMAs has been perceived by the students to be equally cost-effective.

Table 50 Duncan's Test for cost-effectiveness of TMA, CMA, and PC

Note: This test controls the type I comparisonwise error rate

Alpha= 0.05 df= 639

Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*439*	*2.380*	*B*
CMA	*142*	*2.500*	*BB*
PC	*55*	*2.672*	*A*

Hence, in the perceptions of FeU students, the feedback that they get from their course staff in response to their personal letters of querry is not only qualitatively the best but it is also most cost-effective as compared to the feedback which they get through their TMAs and CMAs.

3.2.4.3 Relative Satisfaction at FeU

The ANOVA results comparing the FeU students' satisfaction with feedback they get through TMAs, CMAs and PC in table 3.51 reveal a significant F-value. Which means that students have significantly different satisfaction with the feedback they get through tutor-marked assignments, computer-marked assignments and in response to the personal correspondence they initiate for this purpose.

Table 3.51 ANOVA for satisfaction with feedback through TMA, CMA and PC at FeU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	109.4221	54.7110	7.17	0.0008
Within	594	4534.0350	7.6330		

The pairwise comparison of students' satisfaction with feedback through TMAs, CMAs and PC was done by applying the Duncan's Multiple Range Test. Its results in table 3.52 reveal a significant difference between students' satisfaction with feedback through Personal Correspondence and the feedback they get through TMAs and CMAs. The students of FeU are almost equally satisfied with the feedback they get from TMAs and CMAs. As compared to this, they are significantly more satisfied with the feedback they get from their course staff in response to their personal letters. Hence for the FeU students the best and significantly the most satisfying feedback comes from the teaching staff when they write them personal letters.

Table 3.52 Duncan's Test for satisfaction with TMA, CMA, and PC

Note: This test controls the type I comparisonwise error rate

Alpha= 0.05 df= 594

Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*475*	*14.951*	*B*
CMA	*82*	*14.719*	*BB*
PC	*40*	*16.600*	*A*

On the basis of the total results in section 3.2.4 the following picture emerged about the relative quality of feedback through TMAs, CMAs, and PC at the FeU:

Feedback Strategy	*Quality*	*Cost-effectiveness*	*Satisfaction*
Personal Correspondence	Best	Most	Most
Computer-marked Assignments	Second Best	Second Most	Second Most
Tutor-marked Assignments	Least	Second Most	Second Most

3.2.4.4 Relative Quality at IGNOU

With regard to the relative quality of feedback through TMAs, CMAs and PC at the IGNOU the ANOVA comparison revealed a significant F-value (refer table 3.53). This means that students of IGNOU differ significantly in their perceptions about the quality of feedback they get through tutor-marked assignments, computer-marked assignments and the personal correspondence they initiate with their staff for this purpose.

Table 3.53 ANOVA for Quality of feedback through TMA, CMA and PC at IGNOU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	1304.6430	652.3215	65.96	0.0001
Within	984	9731.9729	9.8902		

The Duncan's test comparing the pairwise perceptions of students in table 3.54 revealed no statistically significant difference in the perceptions of IGNOU students as far as the quality of feedback through TMAs and PC is concerned. This means that qualitatively feedback through tutor-marked assignments and feedback in response to students' personal letters of querry at IGNOU is the same.

Table 3.54 Duncan's Test for quality of TMA, CMA, and PC

Note: This test controls the type I comparisonwise error rate
Alpha= 0.05 df= 629
Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*535*	*12.945*	*A A*
CMA	*239*	*10.167*	*B*
PC	*213*	*12.507*	*A*

But, this human feedback is significantly superior to the machine feedback at IGNOU. This clearly reflects that at IGNOU the tutors/teachers are providing approximately the same quality feedback to their students which is significantly better than that provided by the computer generated comments in response to students CMAs.

Thus it is seen that the situation at IGNOU is quite different from FeU, where the computer provides better feedback than the TMAs. On the basis of this study it is difficult to say whether these differences between the two universities are due to better computer programming at FeU or due to better human input at IGNOU. However, a casual comparison of mean scores of students' perceptions in table 3.48 and 3.54 makes it categorically clear that at FeU even the human feedback is better than IGNOU. Thus it is cleary the poor computer programming at IGNOU which makes its feedback through CMAs to be significantly inferior than TMAs atleast.

3.2.4.5 Relative Cost-effectiveness of Feedback at IGNOU

The IGNOU students' perceptions about the cost-effectiveness of feedback they get through TMAs, CMAs and PC are compared in table 3.55 and 3.56. These comparisons reveal significant differences in students' perceptions. Specifically at IGNOU the most cost-effective feedback comes through the tutor-marked assignments. The next most cost-effective feedback comes in the form of replies to the student initiated personal correspondence with the teacher responsible for the course. And the least cost-effective feedback comes through the CMAs.

Table 3.55 ANOVA for cost-effectiveness of TMA, CMA and PC at IGNOU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	18.3867	9.1933	17.44	0.0001
Within	1043	549.9507	0.5272		

Table 3.56 Duncan's Test for cost-effectiveness of TMA, CMA and PC

Note: This test controls the type I comparisonwise error rate

Alpha= 0.05 df= 1043

Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*559*	*2.271*	*A*
CMA	*256*	*1.953*	*B*
PC	*231*	*2.116*	*C*

3.2.4.6 Relative satisfaction with feedback at IGNOU

With regard to the satisfaction of IGNOU students with the feedback they get from TMAs, CMAs and PC the results in table 3.57 and 3.58 revealed no significant difference in students' attitude.

Table 3.57 ANOVA for cost-effectiveness of TMA, CMA and PC at IGNOU

Source of Variance	*DF*	*Sum of squares*	*Mean Square*	*F-Value*	*Prob > F*
Between	2	14.3192	7.1596	1.96	0.1419
Within	1201	4396.4938	3.6606		

Hence it could be safely interpreted that students of IGNOU are almost equally saitsfied with the feedback they get through tutor-marked assignments, computer-marked assignments and the personal correspondence they initiate with their course staff.

Table 3.58 Duncan's Test for cost-effectiveness of TMA, CMA and PC

Note: This test controls the type I comparisonwise error rate

Alpha= 0.05 df= 1201

Means with same letter are not significantly different.

Variable	*N*	*Mean*	*Duncan Grouping*
TMA	*588*	*11.556*	*A*
CMA	*301*	*11.717*	*A*
PC	*315*	*11.412*	*A*

On the basis of the total results in sections 3.2.4.4, 3.2.4.5 and 3.2.4.6, the following picture emerged about the relative quality of feedback through the three forms of written correspondence at the IGNOU:

Feedback Strategy	*Quality*	*Cost-effectiveness*	*Satisfaction*
Tutor-marked Assignments	Best	Most	Equally
Personal Correspondence	Equally Best	Equally Most	Equally
Computer-marked Assignments	Least	Least	Equally

The results pertaining to the relative quality of feedback through the three forms of written correspondence make it clear that feedback through personal correspondence is the best at FeU, whereas feedback through tutor-marked assignments is the best at IGNOU - FeU seems to be superior than IGNOU even in providing this form of human feedback to its students. Further, the machine feedback i.e. feedback through computer-marked assignments is significantly better than feedback through tutor-marked assignments at FeU. However, this form of machine feedback at IGNOU is the least qualitative and cost-effective.

3.3 Feedback during Face-to-Face Sessions

In the German philosophy of distance education, learner's autonomy is considered to be of prime importance. Hence too much 'structure and dialogue' (Moore, 198) in the form of face-to-face sessions may be regarded by the FernUniversität students as an encroachment on their autonomy. Whereas in the Indian context face-to-face interaction is considered as an essential element for learning, even in distance education. It is because of this basic difference in the philosophic orientation of the two universities with regard to the place of face-to-face interaction possibilities in distance education, that FeU and IGNOU differ quite widely in offering their students the possibilities of face-to-face interaction with the academic staff for tutorial help.

Because of the differences in the two universities in their approach of offering the students the possibilities for face-to-face interaction, comparison of the quality of feedback only through the following three face-to-face interaction possibilities, found to be quite similar in both universities, became possible in this study:

(i) Individual contact with teaching faculty (IC).
(ii) Voluntary contact with tutors at the study centres (VCS).
(iii) Group Seminars by faculty (''Seminar des Lehrgebietes'' in the German terminology and ''Personal Contact Programme'' in the Indian terminology) (GS).

The data in table 3.59 gives the details of the number of students in both universities, who make use of these face-to-face interaction sessions to get feedback for achieving their learning goals as a distance student.

Table 3.59 Utilization of face-to-face possibilities

University➔	*FeU*		*IGNOU*	
Type of Contact↓	*f*	%	*f*	%
1. Individual contact with Faculty (IC)	223	42.15%	432	66.15%
2. Voluntary contact at study centres(VCS)	315	59.54%	313	47.93%
3. Group seminars by faculty(GS)	274	51.79%	281	43.03%

From the data in table 3.47 it is clear that, as compared to 42.15% students in FeU, 66.15% students in IGNOU seek individual face-to-face contact with their teaching faculty for getting learning help. Almost six out of every ten students (59.54%) in FeU and five out of every ten students in IGNOU voluntarily go to the study centres to have a personal interaction with the tutors there to seek academic clarifications to get a redressal of their learning difficulties. With regard to attending the group seminars organised by the teaching faculty from time to time, it is found that more active students of FeU (51.79%) compared to IGNOU students (43.03%) attend these seminars.

From these figures it is clear that, except direct individual contact with the teaching faculty, the students of FeU seek more face-to-face contacts than students of IGNOU at the study centres and during the group seminars held by the teaching faculty. Hence, as far as the active students are concerned, the belief that adult students in Germany (particularly those studying through distance education) being more autonomous will seek less opportunities of face-to-face tutoring is refuted by the data in this study, when compared to students in India. Since the differences in table 3.47 are not significant, it can be safely concluded that students in distance higher education in both India and Germany are almost equally face-to-face interaction oriented.

3.3.1 Quality of feedback during individual contact with faculty staff

Since the feedback during face-to-face interaction is immediate and regular, and it is also not expected to be judgemental in nature, as defined in this study, these three qualities were deleted in the questionnaire designed to study the quality of feedback during face-to-face interaction sessions. In this section it will be examined, in a comparative perspective, whether or not the feedback during individual contacts with the teaching faculty is perceived by the students to be explanatory, concise, clear and facilitative.

With regard to whether the feedback during individual personal contacts with the teaching staff of the faculty is perceived by the students to be **explanatory** in nature or not, the results in table 3.60 reveal that, as compared to 35.19% Students of IGNOU, 58.30% students of FeU perceive the delivery of the faculty staff during individual contacts to be sufficiently explanatory to remove their learning doubts. But 38.12% students of FeU, as compared to 57.18% students of

IGNOU, only sometimes find the delivery of the faculty staff during individual contact to be sufficiently explanatory in nature to remove their learning doubts.

Table 3.60 Explanatory nature of feedback during IC

Q: Is the delivery of the staff during individual personal contacts explanatory to remove your learning doubts?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	223	130	85	8	
		58.30%	38.12%	3.59%	5.661
IGNOU	432	152	247	33	Prob. > 0.0001
		35.19%	57.18%	7.64%	

However, as these differences are statistically significant in favour of FeU, it can safely be interpreted that Faculty staff at the FeU offers significantly more explanatory feedback to its students when they contact them individually for this, than the IGNOU Faculty staff.

Similarly the results in table 3.61 reveal that, as compared to IGNOU Faculty staff, the teaching staff at FeU gives its students significantly more **concise** feedback when the students contact them for this individually.

Table 3.61 Conciseness of feedback during IC

Q: Do you get to the point information desired by you from the staff during these individual contacts?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	221	136	76	9	
		61.54%	34.39%	4.7%	7.952
IGNOU	430	128	241	61	Prob. > 0.0001
		29.77%	56.05%	14.19%	

Specifically it is found that, as compared to three students in every ten (29.77%) at IGNOU, six students in every ten (61.54%) at the FeU always find the teaching staff to give them to the point information desired by them, whenever they contacted them individually for such a help. Further, as compared to only 4.7% students of FeU, 14.19% students of IGNOU reported that the feedback from the faculty staff was never concise when they individually contacted them for this.

With regards to the **clarity** of feedback during individual contacts, the results in table 3.62 are quite surprising to interpret in the light of the above findings. As the students of FeU, who just perceived the feedback from the teaching faculty during individual contacts to be sufficiently explanatory and concise, report that it is not **clear** i.e. it is confusing and full of doubts. Specifically it has been found that, as compared to 9.26% students of IGNOU, 68.47% students in FeU perceive the feedback from the teaching faculty during individual contacts to be never clear i.e. non-confusing and free from doubts. Further, in contrast to 35.88% students of IGNOU, only 3.94% students of FeU always find the delivery of the teaching staff during individual contact to be clear.

Table 3.62 Clarity of feedback during IC

Q: Is the delivery by the staff during individual contacts clear i.e. non-confusing and free from doubts?

Response ➔ *University* ➔	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	203	8	56	139	
		3.94%	27.59%	68.47%	-14.662
IGNOU	432	155	237	40	Prob. > 0.0001
		35.88%	54.86%	9.26%	

Since these differences are statistically significant in favour of IGNOU, it is safely interpreted that, as compared to FeU, students of IGNOU get significantly more clear i.e. non.confusing feedback from their teaching staff during individual contacts. It appears that students in distance education want to the point straight-forward replies to their queries just enough to pass the course (or learn the concept in question), hence exhibition of scholarship by the teacher when the student has called upon her/him for academic help may be confusing to students and may not be appreciated by them. As many of us in DE are having the background of conventional teaching, it is quite normal to go in details and depth of the concept, many a times to leave a good impression of our teaching in the minds of the students, when we have students before us.

The distance student, it seems, is impersonal and un-concerned about our scholarship. She/he travels to us not to be impressed by us or our scholarship at the cost of her/his precious time. Their journey is highly goal directed, achieve it and travel back - and we in DE must appreciate this behaviour of students, as being adults most of them have many social and personal obligations to meet besides learning at a distance.

The students of FeU and IGNOU do not differ significantly in their perceptions about the **facilitativeness** of feedback they get from the teaching faculty when they call upon them individually for learning help. The data in table 3.63 reveals that 57.8% students in FeU and 60% students in IGNOU always find individual contact with the faculty staff to be facilitating their learning. And more than 35% students in both universities find contacting the faculty staff individually to be sometimes facilitating their learning. The number of students for whom these contacts are never facilitating is less than 8% in FeU and 5% in IGNOU.

Hence it is clear that the faculty staff in both universities provide excellent tutoring when the students approach them with individual learning problems. Indirectly it reflects that teaching faculties in both countries have a similar positive and welcoming attitude towards students who call upon them personally.

Table 3.63 Facilitativeness of feedback during IC

Q: Are these individual contacts with the faculty staff facilitating your learning?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney* *z-score*
FeU	211	122	74	15	
		57.82%	35.07%	7.11%	-.705
IGNOU	430	258	151	21	Prob. > 0.4807
		60.00%	35.12%	4.88%	

Finally, with regards to the **overall quality of feedback** during individual contacts with the faculty staff in the two universities it was found, though the mean rank score of IGNOU was slightly higher than that of FeU, that the two universities do not differ significantly in this regard.

Table 3.64 Overall quality of feedback during IC

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	192	57570.0	299.843	-1.101
IGNOU	430	136183.0	316.70	Prob. > = 0.2708

On the basis of results in table 3.64, it can safely be concluded that, on the whole, feedback to students when they individually call upon the teaching faculty in both FeU and IGNOU is almost equally qualitative, though it is significantly more explanatory and concise at FeU and more clear at IGNOU. Perhaps the overall qualitative equality of feedback during individual contacts in the two universities is determined by the clarity and facilitativeness of this feedback received individually from the faculty members.

3.3.1.1 Cost-effectiveness of feedback during individual contacts

Since the students are the end users of the feedback, they are the best judges to assess the effectiveness of feedback they got from what time, money and other individual costs they invested to contact their faculty staff. Using this logic the students in both universities were asked ''If they, on the whole, found these individual contacts to be worth the time and money they spent to seek them?'' The responses of students to this question were considered as the criterion of cost-effectiveness of feedback during individual contacts with the teaching faculty.

The students' responses pertaining to cost-effectiveness in table 3.65 reveal that, as compared to 48.38% students in IGNOU, 66.20% students in FeU always find the individual contacts with the teaching faculty to be worth the time and money they spend to seek them.

Table 3.65 Cost-effectiveness of feedback during IC

Q: On the whole, do you find these individual contacts to be worth the time and money you spend to seek them?

Response ➔ *University ➘*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	213	141 66.20%	59 27.70%	13 6.10%	8.963
IGNOU	432	209 48.38%	160 37.04%	63 14.58%	Prob. > 0.0001

While not only the number of students for whom such is the case only 'sometimes' is more (37.04%) in IGNOU than in FeU (27.70%), it is also more for students for whom it is 'never' cost-effective. Further, as these differences are found to be statistically significant, it can be conluded that feedback during individual contacts with teaching faculty is perceived to be significantly more cost-effective by the students of FeU than the students of IGNOU. This significant difference in the perceptions of the students in two countries is perhaps due the difference in the affluence of the two societies, as a student in India is required to forego more earnings for seeking a contact than a student in Germany, because qualitatively the feedback during individual contacts with faculty staff has been found to be similar in both countries.

3.3.1.2 Students' satisfaction with feedback during individual contacts

Students' satisfaction with feedback they got during individual contacts with teaching faculty was measured by a four item Likert type attitude scale. The results in table 3.66 comparing the satisfaction of students in the two universities reveal a significant difference in the satisfaction of students from FeU and IGNOU. The students of IGNOU are more satisfied with the learning help they get from their teaching faculty when they call upon it individually.

Table 3.66 Satisfaction with feedback during IC

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	79	15.594	2.710	-6.904
IGNOU	456	17.905	2.944	Prob. >0.0001

What makes the students of IGNOU more satisfied than students of FeU, when it has been found that overall quality of feedback during individual contacts in both universities is similar and that students of FeU find this feedback in their case to be more cost-effective? It is an interesting question for further inquiry, as there may be several factors behind it. But on the basis of the findings that feedback by the faculty of IGNOU during individual contact was significantly more clear and facilitating than that provided by the Faculty at FeU, it can be assumed that in distance education these two qualities in feedback during individual contact are important, as far as students'satisfaction is concerned.

3.3.2 Feedback During Voluntary Contacts at the Study Centres

Both IGNOU and the FeU have a good net-work of study centres, where students not only have an access to the material and media back-up but they also have the possibility of getting tutorial help from subject tutors/mentors. In most courses of both universities, visiting study centres for above facilities is left to the choice of the students. Hence often students visit study centres voluntarily. The data in table 3.59 revealed that 59.54% students of FeU and 47.93% students of IGNOU visit their study centres to seek tutorial help from the tutors available to them there. In this section the results pertaining to the quality of feedback they get from tutors at the study centres are analysed. Thereafter, students' perceptions about the cost-effectiveness of - and satisfaction with - this feedback have been analysed.

3.3.2.1 Quality of feedback during voluntary contact at study centres (VCS)

Since the interaction between the tutor and the student at the study centres is face-to-face and it occurs as and when desired by the student, the feedback to students is immediate and regular i.e. as and when needed. Hence, as these two qualities of good feedback are implied in the feedback students come to get at the study centres, they did not form part of analysis here.

Is the delivery of tutors at the study centres sufficiently **explanatory** to remove the learning doubts of students ? The results in table 3.67 reveal that only 46.67% students in FeU and28.75% students in IGNOU find the delivery of tutors at the study centres to be always explanatory, otherwise more than 50% students in these universities say that the tutors are only sometimes sufficiently explanatory in their delivery to remove learning doubts.

Table 3.67 Explanatory nature of feedback during VCS

Q: Is the delivery of the staff during individual personal contacts at study centres explanatory to remove your learning doubts?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	315	147	160	8	
		46.67%	50.79%	2.54%	5.024
IGNOU	313	90	199	24	Prob. > 0.0001
		28.75%	63.58%	7.67%	

In IGNOU for 7.67% students, as compared to 2.54% students in FeU, the delivery of tutors is never explanatory to remove their learning doubts, when they visit the study centres to consult them. However, as these differences between the two universities are statistically significant in favour of FeU, it is clear that, as compared to IGNOU, tutors at the study centres of FeU are doing a better job by providing more explanatory feedback perceived by the students to remove their learning doubts.

With regard to the **Conciseness** of feedback from the tutors at the study centres, the results in table 3.68 reveal that only 24.92% students in IGNOU and 44.55% students in FeU report to always get to the point information they need from the tutors at the study centres.

Table 3.68 Conciseness of feedback during VCS

Q: Do you get to the point information desired by you from the staff during these individual contacts?

Response ➔ University ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	312	139	157	16	
		44.55%	50.32%	5.13%	5.975
IGNOU	313	78	190	45	Prob. > 0.0001
		24.92%	60.70%	14.38%	

Otherwise for more than 50% students in both universities such happens only sometimes at the study centres. 5.13% students in FeU and 14.38% students in IGNOU even report that tutors at the study centres never give to the point information that they need for smooth learning. However, as these differences between the two univeristies are statistically signficant, it is clear that tutors at the study centre of FeU are doing a better job than the tutors of IGNOU. Their feedback to students is definitely more concise than the one provided by the tutors of IGNOU.

With regard to the **clarity** of feedback from tutors at the study centres, it has been found that, as compared to every third student (34.50%) in IGNOU, only every twentieth student (5.03%) in FeU always finds the delivery of the tutors at the study centres to be clear i.e. non-confusing and free from doubts. Surprisingly more than 55% students in FeU, as compared to only 7% students in IGNOU, report that the delivery of tutors at their study centres is never clear. Which means it is always confusing them or it creates doubts in their minds. Further, only 39.26% students in FeU, as compared to 58.47% students in IGNOU, report that the delivery of tutors is only sometimes clear and non-confusing. As these differences are statistically significant (refer table 3.69), it is evident that feedback from tutors at study centres of IGNOU is definitely more clear and significantly less confusing than that provided by the tutors of FeU.

Table 3.69 Clarity of feedback during VCS

Q: Is the delivery by the staff at the study centres during individual contacts clear i.e. non-confusing and free from doubts?

Response ➔ *University ⬇*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	298	15	117	166	
		5.03%	39.26%	55.70%	-13.794
IGNOU	313	108	183	22	Prob. > 0.0001
		34.50%	58.47%	7.03%	

Is individual consultation with tutors at study centres **facilitating** the learning of students in the two universities? The results in table 3.70 reveal that in the case of more than 50% students in both universities these contacts are always facilitating their learning. And in the case of 35.24% FeU and 42.81% IGNOU students these contacts are perceived to only sometimes facilitate learning. In both universities only about 5% students do not find contacting tutors at the study centres to be facilitating their learning. As these differences between FeU and IGNOU are not significant, it is clear that individual contact for tutorial help with tutors at the study centres of these universities is equally facilitating the students' learning.

Table 3.70 Facilitativeness of feedback during VCS

Q: Are these individual contacts with the staff at study centres facilitating your learning?

Response ➔ *University ⬇*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	315	187	111	17	
		59.37%	35.24%	5.40%	1.361
IGNOU	313	166	134	13	Prob. > 0.1735
		53.54%	42.81%	4.15%	

The above analysis about the quality of feedback that students get from tutors at the study centres reveals that the feedback by the tutors of FeU is significantly more explanatory and concise. But it is significantly more clear for students of IGNOU, and is equally facilitative for students in both universities. A further analysis by pooling the responses of students on the above feedback qualities enabled the comaprison of **overall** quality of feedback to students during voluntary contact with tutors at the study centres in these universities. The results of this analysis are presented in table 3.71.

Table 3.71 Overall quality of feedback during VCS

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	295	87634.50	297.066	-1.0377
IGNOU	313	97501.50	311.506	Prob. > = 0.2994

The results of the analysis comparing the overall quality of feedback from tutors at the study centres in table 3.71 reveal a not significant difference between FeU and IGNOU. Hence it can be inferred that feedback from tutors at the study centres of these universities is equally qualitiative, as far as the overall quality of this feedback is concerned.

3.3.2.2 Cost-effectiveness of feedback during VCS

On the whole, do students of FeU and IGNOU perceive individual contacts with staff at study centres to be worth the time and money they spend for it? Students' perceptions on a three point scale, presented and compared in table 3.72, provided the data interpreted in this study as the cost-effectiveness of feedback during voluntary contacts at the study centres.

Table 3.72 Cost-effectiveness of feedback during VCS

Q: On the whole, do you find these individual contacts with staff at the study centres to be worth the time and money you spend to seek them?

Response ➔ *University ➘*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	312	183	111	18	
		58.65%	35.58%	5.77%	6.978
IGNOU	313	140	124	49	Prob. > 0.0001
		44.73%	39.62%	15.65%	

The results in table 3.72, pertaining to students' perceptions about the cost-effectiveness of feedback from tutors at their study centres, reveal that 58.65% FeU and 44.73% IGNOU students, on the whole, always find individual contact with tutors at the study centres to be worth the time and money they spend for such contact. For 35.58% FeU and 59.62% IGNOU students visits to study centres are only sometimes cost-effective. But, as compared to only 5.77% students of FeU, for 15,65% students of IGNOU these contacts with tutors at the study centres are never cost-effective. As these differences are statistically significant it can be safely interpreted that, on the whole, the feedback from tutors during voluntary contact at the study centres is perceived to be significantly more cost-effective by the students of FeU than students of IGNOU.

3.3.2.3 Satisfaction with feedback during VCS

With regard to the students' satisfaction with the feedback they get during their meetings with tutors, whom they call voluntarily at the study centres, the T-test comparison of students' satisfaction, measured by the four item Likert scale, has been done in table 3.73. A significant difference has been found between the satisfaction of FeU and IGNOU students.

Table 3.73 Satisfaction with feedback during VCS

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	197	15.111	2.333	-10.813
IGNOU	344	17.642	3.054	Prob. >0.0001

Since the mean satisfaction score of IGNOU students is more than that of FeU students, it can be inferred that, as compared to FeU students, the students of IGNOU are significantly more satisified with the feedback they get from tutors at the study centres.

Thus it appears that satisfaction with feedback from tutors at the study centres is not related to costs involved in getting it, as the IGNOU students perceived this feedback to be less cost-effective than FeU students. What other factors determine students' satisfaction with support they get at the study centres is a good question for further empirical research, as it may enable us to provide better support services to make the optimum use of the heavy investement required to run the study centres.

3.3.3 Quality of feedback during Group Seminars (GS)

The 'Personal Contact Programmes' of IGNOU and 'Die Seminare des Lehrgebiets' at FeU are comparable opportunities offered to the students to come face-to-face with their Teaching Faculty in Groups. In fact teaching faculties in both universities organise from time to time certain group seminars for their students. In most cases a minimum number of these seminars are compulsory to attend. These group seminars (GS) are designed to provide distance students not only the opportunity to come in personal contact with their teaching faculty, they also aim at providing them an opportunity to discuss- and share ideas on- topics of academic concern. Thus these group seminars act as forum for students to get face-to-face feedback from their respective teaching faculty. In this section we will examine whether or not the feedback students get during these group seminars is perceived by them to be explanatory, concise, clear and facilitative for their learning.

With regard to whether feedback during group seminars is sufficiently explanatory or not for removing the learning doubts of students, results in table 3.74 reveal 44.53% students in FeU and 36.30% students in IGNOU always find the delivery of the faculty during group seminars to be explanatory to remove their learning doubts. For a little more than every second student in both universites the delivery of the faculty is only sometimes sufficiently explanatory.

Table 3.74 Explanatory nature of feedback during GS

Q: Is the delivery of the staff during Group Seminars explanatory to remove your learning doubts?

Response ➔ *University* ⬇	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	274	122	138	14	
		44.53%	50.36%	5.11%	2.617
IGNOU	281	102	146	33	Prob. > 0.0088
		36.30%	51.96%	11.74%	

However, the faculty's delivery is never explanatory for 11.74% students in IGNOU and for 5.11% students of FeU. As these differences in table 3.74 are statistically significant, it can be safely inferred that delivery of FeU's faculty is significantly more explanatory than the delivery of IGNOU's faculty.

Similarly the students of FeU perceive the delivery of their faculty to be signficantly more **concise** than the students of IGNOU. The results in table 3.75 reveal that, as compared to 28.47% students in IGNOU, 56.83% students in FeU report that they get to the point detailed information from their faculty during the group seminars. As compared to 2.58% students in FeU, there are almost 10% more students in IGNOU who say that the delivery of their faculty staff during these seminars is never concise. Thus it is fairly evident that the teaching faculty at FeU is significantly more concise in its delivery than IGNOU's faculty during group seminars

Table 3.75 Conciseness of feedback during GS

Q: Do you get to the point information desired by you from the staff during these Group Seminars?

Response ➔		*Always*	*Sometimes*	*Never*	*Mann-Whitney*
University 🡻	*N*				*z-score*
FeU	271	154	110	7	
		56.83%	40.59%	2.58%	7.281
IGNOU	281	80	165	36	Prob. > 0.0001
		28.47%	58.72%	12.81%	

With regard to the **clarity** of delivery, the results in table 3.76 are quite surprising in the sense that, as compared to just 9.25% IGNOU students, a majority of 65.20% FeU students say that they never find the delivery of their teaching faculty during group seminars to be free from confusions and doubts, although, we have just examined above that they find their faculty to be sufficiently explanatory and concise in their delivery during group seminars.

Table 3.76 Clarity of feedback during GS

Q: Is the delivery by the staff during Group Seminars clear i.e. non-confusing and free from doubts?

Response ➔		*Always*	*Sometimes*	*Never*	*Mann-Whitney*
University 🡻	*N*				*z-score*
FeU	250	12	75	163	
		4.80%	30.00%	65.20%	-14.052
IGNOU	281	117	138	26	Prob. > 0.0001
		41.64%	49.11%	9.25%	

It appears that the teaching faculty at FeU, in an attempt to either give deeper knowledge or to impress the students with their teaching, dwells upon extra aspects of no interest to students from the point of view of passing the course. May be it is confusing them. Whatever the case may be, from the results in table 3.76 it is clear that the faculty at IGNOU is doing a better job than the faculty of FeU in this respect.

The participation in group seminars is perceived to always **facilitate** learning by 66.79% students of FeU and 53.02% students of IGNOU. And almost every fourth student in FeU and every third student in IGNOU says that these seminars sometimes facilitate their learning. Thus it is fairly clear that group seminars are highly welcomed by students in both universities. However, as the observed differences in table 3.77 are statistically significant in favour of FeU, it can safely be concluded that the group seminars by the faculty of FeU are perceived by its students to be significantly more facilitating their learning than students of IGNOU.

Table 3.77 Facilitativeness of feedback during GS

Q: Are these group contacts with the faculty staff facilitating your learning?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	268	179	72	17	
		66.79%	26.87%	6.34%	3.185
IGNOU	281	149	108	24	Prob. > 0.0014
		53.02%	38.43%	8.54%	

When the **overall quality** of feedback during group seminars was compared by pooling the frequencies of students' response to all the quality questions in this section, no statistically significant difference was found in the perceptions of students in both universities.

Table 3.78 Overall quality of feedback during GS

University	*N*	*Sum of Ranks*	*Mean Ranks*	*Mann Whitney z-score*
FeU	245	62555.50	255.32	-1.178
IGNOU	281	76045.50	270.624	Prob. > = 0.2388

Hence it can be concluded that the overall quality of feedback from faculty during group seminars is equally good at both universities, though the delivery of FeU's teaching staff is significantly more explanatory and concise. And that the delivery of IGNOU's staff is significantly more clear.

3.3.3.1 Cost-effectiveness of Feedback through Group Seminars

On the whole, do the students of FeU and IGNOU find attending the group seminars to be worth the time and money they spend to attend them? Students' response to this question on a three point scale yielded the data that has been interpreted here as the cost-effectiveness of feedback students get through these seminars. The results in table 3.79 reveal that 69.37% students of FeU and 47.69% students of IGNOU always find attending these seminars to be worth the time and money they have to spend for them. But attending these seminars is only sometimes cost-effective for 25.83% students in FeU, as compared to 41.28% students in IGNOU. However, for 11% students of IGNOU as compared to just 4.8% FeU students these seminars are never cost-effective.

Table 3.79 Cost-effectiveness of feedback during GS

Q: On the whole, do you find these group seminars to be worth the time and money you spend to attend them?

Response → *University ↓*	*N*	*Always*	*Sometimes*	*Never*	*Mann-Whitney z-score*
FeU	271	188	70	13	
		69.37%	25.83%	4.80%	7.742
IGNOU	281	134	116	31	Prob. > 0.0001
		47.69%	41.28%	11.03%	

As the differences between the perceptions of students pertaining to cost-effectiveness of attending group seminars are statistically significant, it can be concluded that feedback from group seminars is significantly more cost-effective for the students of FeU than the students of IGNOU.

3.3.3.2 Satisfaction with feedback during Group Seminars

As the students of FeU perceived the feedback during group seminars to be more cost-effective than students of IGNOU, it was expected that they will also be more satisfied with it. But the results in table 3.80 reveal that students of IGNOU are significantly more satisfied than students of FeU.

Table 3.80 Satisfaction with feedback during GS

University	*N*	*Mean*	*S.D.*	*T-value*
FeU	257	15.178	2.366	-11.890
IGNOU	311	17.803	2.894	Prob. >0.0001

This means that satisfaction with feedback during group seminars is perhaps not determined by the costs involved to get it, rather it depends on certain other factors - quality of feedback may be just one such factor. Whatever the case may be, it is really a subject for a more systematic inquiry as to what factors determine students' satisfaction with feedback they get during the group seminars organised by the teaching faculty of the university.

3.3.4 Relative Quality of Feedback During Face-to-Face Sessions

The foregone analysis about the feedback during face-to-face interaction sessions revealed a comparative picture of its quality, cost-effectiveness and students' satisfaction with it at the FeU and IGNOU. This analysis did not provide a relative picture about the quality of, cost-effectiveness of and students'satisfaction with the feedback they get during their: (i) individual contact with teaching faculty (IC); (ii) voluntary contact with tutors at the study centres (VCS); and (iii) group seminars by the faculty. Since the data pertaining to the quality, cost-effectiveness and students' satisfaction with feedback during these three forms of face-to-face communication possibilities was collected through common items in the questionnaire, it became possible to compare them and draw inferences in a relative perspective. In this section, an attempt has been made to present this relative picture of the feedback during face-to-face sessions separately for FeU and IGNOU. Hence the analysis in this section should provide an empirical answer, in terms of students' perceptions, to the question 'is the the feedback through the three forms of face-to-face interaction in distance education qualitatively the same or does it differ from one interaction possibility to another'?

In order to compare the relative quality of feedback through IC, VCS and GS, One-way Analysis of Variance test was applied to compare the overall quality scores, which were obtained by pooling the frequencies scored as 3=always, 2=sometimes, and 1=never, for each of the four quality dimensions of the three face-to-face feedback possibilities. Where ANOVA yielded a significant F-value, Duncan's Multiple Range Test was applied to find out the specific significant differences by pairwise comparison among the three interaction possibilities. This test was chosen because of its robustness in taking care of the type one error in subsequential pairwise comparisons. This analysis was done and is reported separately for FeU and IGNOU, as the application of General Linear Models Procedure revealed a significant interaction effect of the institutions with the quality of feedback. The same analysis procedure was adopted to compare the cost-effectiveness and students' satisfaction.

3.3.4.1 Relative Quality at FeU

With regard to the relative quality of feedback during individual contacts with teaching faculty staff (IC), voluntary contacts with tutors at the study centres (VCS) and group seminars (GS) conducted by the faculty staff, the ANOVA comparison presented in table 3.81 revealed a not significant F-value.

Table 3. 81 ANOVA comparing quality of feedback through IC, VCS and GS at FeU

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	3.6913	1.8456	1.09	0.3365
Within	729	1233. 5217	1.6920		

This means that the students of FeU perceive to get qualitatively almost the similar feedback from the concerned staff during the three forms of personal contact. In other words the feedback to students from the FeU's teaching faculty during group seminars or during students' personal individual contact is qualitatively as explanatory, concise, clear and facilitative as provided by the tutors at the study centres, when the students voluntarily contact them for academic clarifications. This implies that students at FeU need not approach their faculty staff for academic help, if they have a study centre at an easily accessible distance - if they do so, they will not be at a disadvantage than those who directly seek a contact with the teaching faculty at FeU.

3.3.4.2 Relative Cost-effectiveness at FeU

A comparison of students' perceptions about the cost-effectiveness of feedback during the three types of personal contact in table 3.82 revealed a significant difference at the .05 level of significance. Which means the cost-effectiveness of feedback from at least any one of the three forms of face-to-face contact may be significantly different from any one of the other forms.

Table 3.82 ANOVA comparing cost-effectiveness of feedback through IC, VCS and GS

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	2.0314	1.0157	2.89	0.0562
Within	793	278.8128	0.3515		

The Duncan's Multiple Range Test making a pairwise comparison of the cost-effectiveness of feedback through the three forms of personal contact in table 3.83 revealed a significant difference in the cost-effectiveness of feedback during group seminars by the faculty and voluntary contact with the tutor/mentor at the study centre.

Table 3.83 Duncan's test for cost-effectiveness of feedback through IC, VCS and GS

Note: This test controls the type I comparisonwise error rate

Alpha = 0.05 df = 793

Means with same letter are not significantly different.

Variable	N	Mean	Duncan Groupings
GS	271	2.645	A
IC	213	2.600	A AB
VCS	312	2.528	B

Specifically the feedback during group seminars was significantly more cost-effective than contacting the mentor at the study centre. It appears that the mentors are often not readily available to the students when they visit the study centres to contact them. Hence the students are required to invest more time and money to get feedback from them than group seminars which are well planned and organised by the faculty. The feedback during individual contacts with faculty and group seminars is not only equally qualitative but it is also equally cost-effective for students of FeU.

3.3.4.3 Relative satisfaction at FeU

With regard to students satisfaction with feedback they get through IC, VCS and GS, the ANOVA comparison in table 3.84 reveals no statistically significant difference. Hence it can be safely interpreted that students of FeU are equally satisfied with the feedback they get during: (i) their individual contact with the teaching faculty; (ii) their voluntary contact with mentors at the study centres; and (iii) the group seminars organised by their teaching faculty.

Table 3. 84 ANOVA comparing satisfaction with feedback through IC, VCS and GS

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	13.8399	6.9199	1.19	0.3041
Within	530	3074.3476	5.8006		

Based on the total results in section 3.3.4, the following picture emerged about the relative quality of feedback during the three types of face-to-face sessions at the FeU:

Feedback Strategy	*Quality*	*Cost-effectiveness*	*Satisfaction*
Individual contact with faculty	Equally good	Equally Most	Equal
Voluntary contact at study centres	Equally good	Least	Equal
Group Seminars by faculty	Equally good	Most	Equal

3.3.4.4 Relative Quality at IGNOU

The results of the analysis of variance in table 3.85 reveal that students of IGNOU perceive to get qualitatively the same feedback during the three forms of face-to-face sessions. In their perception feedback provided by the faculty staff during individual contact or during group seminars (''personal contact programmes'' in the Indian terminology) is as explanatory, concise, clear and facilitative as provided by the tutors at the study centres, when they are called upon individually.

Table 3.85 ANOVA comparing Quality of feedback through IC, VCS and GS

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	5.3285	2.664	0.81	0.4466
Within	1021	3371.6783	3.302		

3.3.4.5 Relative cost-effectiveness at IGNOU

The students of IGNOU do not differ significantly in their perceptions about the cost-effectiveness of feedback they get during the three forms of face-to-face interaction sessions (refer table 3.86). Hence for IGNOU students the feedback from the faculty staff during individual contacts or during group seminars is as cost-effective as it is from the tutors at the study centres.

Table 3.86 ANOVA comparing cost-effectiveness of feedback through IC, VCS and GS

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	0.8833	0.4416	0.88	0.4144
Within	1023	512.4460	0.5009		

3.3.4.6 Relative satisfaction at IGNOU

With regard to IGNOU students' satisfaction the ANOVA results in table 3.87 reveal that they are equally satisfied with the feedback they get during the three types of face-to-face contact sessions at their institution. This again means that a contact with faculty staff either individually or in groups is as satisfying as it is with the tutor at the study centre.

Table 3.87 ANOVA comparing satisfaction with feedback through IC, VCS and GS

Source of Variance	*DF*	*Sum of Squares*	*Mean Square*	*F-Value*	*Prob>F*
Between	2	13.6183	6.8091	0.77	0.4612
Within	1108	9743.0008	8.7933		

On the basis of these results the following picture emerged about the relative quality of feedback during face-to-face sessions at IGNOU:

Feedback Strategy	*Quality*	*Cost-effectiveness*	*Satisfaction*
Individual contact with faculty	Equally good	Equally effective	Equal
Voluntary contact at study centres	Equally good	Equally effective	Equal
Group Seminars by faculty	Equally good	Equally effective	Equal

3.4 Non-contiguous Interaction on Electronic Media

As the 'separation of teacher and student' and the 'provision of two-way communication' are two essential characteristics of distance education (refer Keegan, 1983), communication's technology plays a very important role in mediating the non-contiguous two-way communication in distance education. "In fact, given this non-contiguity and the need for teacher-student interaction, it is a virtual tautology to say that media are essential in distance education. The essential nature of mediated communication to distance education emphasizes the need to understand the impact that new technologies have had on distance education delivery methods" (Garrison, 1985). It is with this aim of understanding the impact of new technologies in distance education, that an attempt has been made in this part of the study to examine the perceptions of students in distance education regarding the quality of feedback they get non-contiguously via technological media used in their university, and to further examine how cost-effective they find it with what degree of saitsfaction.

The application of communication technologies for providing feedback to students in FeU and IGNOU is so different that a comparison between them is not possible. For example, teleconferencing is used in IGNOU and not used in FeU. In FeU one finds the use of internet facility to communicate with students through computer, whereas it is not available to students at IGNOU. The telephone is the only electronic mode which is being used both at FeU and IGNOU. Hence a comparison of the use of telephone for feedback purpose has been done in the following section. Thereafter, since the data on the application of teleconferencing at IGNOU and computers at FeU for providing feedback to students has been collected in this study, their reporting is being done separately for these universities in the sections that follow.

3.4.1 Feedback on Telephone

Since communication on telephone is without the visual channel, teaching by telephone suffers the problems described by Short (1974). However, its advantages outweigh the limitations of talking without the visual channel, as it is a most readily and economically available medium of non-contiguous two-way communication available to distance education today. It has the advantage over written communication that it gives the student a chance to respond to and question the teacher immediately. Hence the feedback is immediate, potent and insistent. Its regularity is in the hand of the student, as it is available to her/him as and when the teacher is called - of course it will also depend upon the availability of the teacher on call. Since it is insistent and potent, its explanatoriness, conciseness and clarity can be negotiated by the student. Hence assuming that these qualities will be inherent in the feedback that students will get from their faculty staff responsible for their course, only five questions that will reflect generally about the quality of feedback on telephone were asked to the subjects in this study. The analysis of students' responses to these questions is presented in this section.

3.4.1.1 Frequency of telephone contact

The data in table 3.88 reveals that 54.06% students in FeU and 46.09% students in IGNOU call their teaching staff i.e.the staff responsible for the particular course to get clarifications related to their course content. Which means around half of the active students in both universities make use of telephone conversation to get feedback for learning the course content.

Table 3.88 Frequency of telephone contact

Q. How often do you call your teaching staff to get clarifications related to your course?

Response ➔			*Once a month*		*Once a week*		*More*	
University ⬇	*N*	*%*	*f*	*%*	*f*	*%*	*f*	*%*
FeU	286	54.06%	222	77.6%	52	18.2%	12	4.1%
IGNOU	301	46.09%	216	71.8%	53	17.6%	32	10.6%

With regard to the frequency of telephone contact with the staff responsible for providing guidance on the course, results in the above table reveal that more than 70% active students in both universities call their staff only once in a month. Around 18% active students in both universities call their staff once a week. There are about 4% students in FeU and 10% students in IGNOU who even call their staff more than once in a week. From these figures it is fairly clear that active students in both universities are making a very good use of telephone conversation (more than written personal correspondence) to get a course related feedback from the staff responsible for the course in question.

3.4.1.2 Availability of staff on phone

With regard to the availability of staff to respond the phone call of the student, the data in table 3.89 reveals that a little more than every second student in both universities gets the contact with staff immediately in the first attempt. As compared to every tenth (10.3%) student in IGNOU, almost every seventh (15%) student in FeU says that she/he gets the desired contact after two attempts. The staff responsible for the course becomes available on phone only after 3 to 4 attempts for every seventh and fifth active student in FeU and IGNOU respectively. It is also worth noting that for 13.8% students in FeU and for 19.3% students the staff never becomes available on phone to provide them tutorial help.

Table 3.89 Availability of staff on phone

Q. Is the staff immediately available on phone to clarify your learning doubts?

Response ➔ University 🡇	N	1st attempt		2nd attempt		3 to 4 attempts		Never	
		f	%	f	%	f	%	f	%
FeU	319	180	56.4%	48	15.0%	47	14.8%	44	13.8%
IGNOU	301	154	51.2%	31	10.3%	58	19.3%	58	19.3%

3.4.1.3 Quality of Feedback on Phone

Since the communication on phone is two-way, most qualities of good feedback were assumed (refer section 3.4.1) in the feedback a student would get during the telephonic conversation. Hence a general question that would give an overall idea about the quality of feedback on phone was asked to students in both universities. The question was: "Do you find the purpose has been achieved for which you called up?"

The students' response to this question in table 3.90 reveals that in the case of 56.8% students of FeU the purpose of calling the staff is always achieved. But this is always achieved only in the case of just 15.4% students in IGNOU. Of course the number of students who say that the purpose of calling is only sometimes achieved is 72.2% in IGNOU, as compared to only 38% in FeU. Finally, as compared to just 5.2% students in FeU, more than 12% students in IGNOU report that the purpose for which they call their staff is never achieved in their case.

Table 3.90 Quality of feedback on phone

Q. Do you find the purpose has been achieved for which you called up?

Response➔ Unversity🡇	N	Always		Sometimes		Never		Mann-Whitney
		f	%	f	%	f	%	Z-score
FeU	345	196	56.8%	131	38.0%	18	5.2%	6.758
IGNOU	301	46	15.4%	216	72.2%	37	12.4%	Prob > 0.0001

Since the differences in table 3.90 are statistically significant in favour of FeU, it can safely be interpreted that the quality of feedback provided by the staff on phone at FeU is significantly better than that provided by the staff at IGNOU. There could be several possible reasons for this, which need to be identified and taken care of through systematic research at IGNOU.

3.4.1.4 Cost-effectiveness of Feedback on Phone

On the whole, do the students find this telephone talk to be worth the time and money they spend in calling their staff? The students' responses to this question are compared in table 3.91

Table 3.91 Cost-effectiveness of feedback on phone

Q. On the whole, do you find this telephone talk to be worth the time and money spent in calling?

Response➔ *Unversity*🡇	*N*	*Always*		*Sometimes*		*Never*		*Mann-Whitney*
		f	*%*	*f*	*%*	*f*	*%*	*Z-score*
FeU	339	232	68.4%	84	24.8%	23	6.8%	14.543
IGNOU	301	57	18.9%	173	57.5%	71	23.26%	Prob > 0.0001

On the whole, as compared to just 18.9% students in IGNOU, 68.4% students in FeU always find the telephonic talk with their staff to be worth the time and money they spent for the call. Further, as compared to just 6.8% students in FeU, the telephonic conversation with course staff is never perceived as cost-effective by 23.26% students in IGNOU. Since these differences are statistically significant, it is clear that feedback on telephone is significantly more cost-effective for students at FeU than at IGNOU. Perhaps two reasons appear to be relevant for this: (i) we saw above that qualitatively feedback on telephone was perceived to be inferior than FeU; and (ii) relatively calling on phone is more expansive in India than in Germany in terms of what portion of earnings one has to forego for a call.

3.4.1.5 Satisfaction with feedback on Phone

On the whole, how satisfied the students feel with the telephone conversation with staff giving them feedback for learning the course they have opted? The students' response in table 3.92 reveals that, as compared to 58.2% students in FeU, only 9.3% students in IGNOU feel very satisfied with the telephone conversation with their academic staff.

Table 3.92 Satisfaction with feedback on phone

Q. On the whole, how satisfied you feel with this telephonic conversation?

Response➔ Unversity🡻	N	Very satisfied		Just satisfied		Not satisfied		Mann-Whitney Z-score
		f	%	f	%	f	%	
FeU	339	197	58.2%	118	34.8%	24	7.0%	11.223
IGNOU	301	28	9.3%	173	57.5%	71	23.6%	Prob > 0.0001

And as compared to 34.8% students in FeU, 57.5% students in IGNOU are just satisfied with this telephonic conversation. And as compared to just 7% students in FeU, there are 23.6% students in IGNOU who are not satisfied with the telephonic conversation with their supporting staff. Finally as these differences are statistically significant, it is clear that feedback on telephone is more satifactory for students of FeU than for students of IGNOU. The obvious reasons for this significant difference lie, perhaps, in the perceptions of students regarding the quality and cost-effectiveness of this feedback.

3.4.2 Feedback through Teleconferencing

At the Indira Gandhi National Open University satellite based teleconferencing was launched as an experiment in 1993 with the help of Indian Space Research Organisation (ISRO). Since then a one-way video and two-way audio teleconferencing has been used as a component of extended contact programme (ECP) which enables the students pursuing Diploma in Higher Education course to participate in group discussion and question answer sessions with experts in the field of their study. Sahoo (1994) evaluated the 1993 experiment on the basis of the perceptions of 8 participants who attended the ECP at the Bhopal regional centre of IGNOU. Similarly Sinha et al (1994) evaluated the same experiment taking the perceptions of the students who participated in ten different regional centres of IGNOU. In general the results of these studies showed overall success of this experiment. The participants reported this interactive mode of teaching to be very useful for distance education as well as for the extended contact programme. Although a majority of the students had the opinion that the topics catered to their information needs and were very relevant to them, nearly half of the students reported their inability in understanding the contents of the programme to full extent. Majority of the participants also reported inadequate time allocation for question answer sessions and not all participants who wanted to interact could get the opportunity to do so. The difficulties of getting a telephone line and high costs of telecommunication were also generally reported by the participants.

Although the study in hand is not an indepth evaluation of the type done by Sahoo (1994) and Sinha et al (1994), however, the questions asked in this survey will reveal different indicators about the quality of feedback that students are getting through teleconferencing at IGNOU.

In this survey out of 653 students in the sample 78 i.e. 11.94% students reported to have been participating in the teleconferencing sessions for getting feedback in the courses they were studying at IGNOU. These 78 students answered the eight probing questions that were asked about the quality of feedback they get, their satisfaction with it and the cost-effectiveness of this feedback for them. In the following sections an analysis of these responses has been presented.

3.4.2.1 Aims of attending Teleconferencing Sessions

With what aims in mind do the students of IGNOU attend the teleconferencing sessions? The frequencies and percentages in table 3.93 reveal that, of the 78 students who reported participation in these sessions, 42.30% attended them with the intention of entering into a discussion with staff and fellow students. Naturally this discussion will be on issues related to the topic of the course being taken up in that teleconferencing session.

Table 3.93 Aims of attending teleconferencing sessions

Aims	*Frequency*	*Percentage*
1. To enter into a discussion with staff and fellow students.	33	42.30%
2. To discuss assignment related problems with staff.	46	58.97%
3. To get more information related to the course.	64	82.05%

58.97% students participated in the teleconferencing sessions with the aim of discussing the assignment related problems and issues with the staff. Lastly, 82.05% students attended these sessions to get more information related to the course. It is interesting to note that more than eight students out of ten attend the teleconferencing sessions to directly benefit from the lecture of the experts on the course related topic. Thus teleconferencing sessions appear to be serving the purpose of Extended Contact Programme (ECP) by supplementing the course content by lecture for 82.05% participants or beneficiaries of teleconferencing.

3.4.2.2 Money spent for attending teleconferencing sessions

The students were asked to give the approximate amount that they spent in the last academic session to attend the teleconferencing sessions. From the figures in table 3.94 it is clear that 24.6% students spend up to 100 rupees and 23% spend up to 200 rupees to attend the teleconferencing sessions. About 300 rupees are spent by 18% students and there are 8.2% students who have to spend up to 400 rupees for this purpose.

Table 3.94 Money spent for teleconferencing

RS. Class Interval	*Frequency*	*Percent*	*Cum. %*
Up to 100	15	24.6%	24.6%
101 to 200	14	23.0%	47.6%
201 to 300	11	18.0%	65.6%
301 to 401	5	8.2%	73.8%
401 & above	16	26.2%	100%

Frequency missing = 17

From the figures in table 3.94 it is also clear that more than every fourth (26.2%) is required to spend more than 400 rupees to attend the teleconferencing sessions in a academic session. This is a heavy amount for a student to bear, if he is unemployed in the Indian context. Perhaps this is the reason that in the study conducted by Sinha et al (1994) students reported the participation in these sessions to be expensive.

3.4.2.3 Quality of feedback through teleconferencing

Five questions were designed for studying the quality of feedback that students get through participating in the teleconferencing sessions. The students were required to assess for themselves if they found the quality asked in the question to be present in the teleconferencing sessions they attended. They were to give their response by telling if the asked quality was **always, sometimes** or **never** present in the feedback they got through the attended teleconferencing sessions. The frequency and percentage of students' response to the five questions is presented in table 3.95 and these results are interpreted in this section.

From the results in table 3.95 it is clear that approximately every third or fourth student (23.1%), who participates in the teleconferencing sessions, is always in a position to generate a discussion on her/his points of view. 64.1% students say that they are only sometimes able to generate discussion on their points of view. Which means around every second student has this possibility. There are 12.8% students who say they are never able to generate this discussion. From these results it is clear that there is a quite large majority of students who are just passive participants in the teleconferencing sessions.

Table 3.95 Quality of feedback through teleconferencing

Response ➔	*Always*		*Sometimes*		*Never*	
Quality Questions ⬇ *(N = 78)*	*f*	%	*f*	%	*f*	%
1. In the teleconferencing session how often are you able to generate discussion on your points of view?	18	23.1%	50	64.1%	10	12.8%
2. How often does the university staff join this discussion to clarify your doubts?	29	37.7%	36	46.8%	12	15.6%
3. Do you find this discussion to clarify the points for which you initiated it?	33	42.3%	37	47.4%	8	10.3%
4. Do you find these discussions to be facilitating your learning?	36	46.2%	34	43.6%	8	10.3%
5. On the whole, how often do you find your learning needs to be satisfied at the end of the teleconferening session?	20	26.0%	52	67.5%	5	6.5%

This means they are though participating in a teleconferencing class but practically they are just sitting before the television screen as passive viewers - of course they are supposed to benefit from the discussion generated by their fellow students. Whether the quality of learning of these passive students is as good as of those students who were able to generate a discussion on their points of view is an important issue for further research in distance education.

The students' response to the second question in table 3.95 reveals that for 37.7% students the participating university staff always takes up the problems and doubts raised by them for clarification. This is perceived to happen only sometimes by 46.8% students. But almost every sixth student (15.6%), from those who participate in these sessions, says that the university staff never takes up the command of discussion to clarify their doubts. On the basis of data in this study it is difficult to say how many from these are those students who were just passive and did not or could not actively participate in these sessions. However, on the basis of these data it is fairly clear that the teleconferencing sessions of IGNOU are fairly interactive allowing adequate participation to students. Even in the normal face-to-face teaching one would neither find nor expect more interaction.

The students' response to question three in table 3.95 reveals that 42.3% students always find, and 47.4% students sometimes find, the teleconferencing discussion to clarify the points for which they initiated this discussion. If these findings are interpreted in the light of students' response to question one and two above, where only 23.1% students reported to have initiated a discussion, than it is fairly clear that even those students' doubts are also being clarified who did not initiate the discussion. Exactly the same happens in the conventional teaching class, hence the teleconferencing sessions are appearing to successfully do the job of extending the benefit of classroom teaching to students scattered in a wide geographical area.

The participants' response to question four in table 3.95 reveals that an increasing number of students (46.6%) always find the discussions in the teleconferencing sessions to be facilitating their learning. For 43.6% students participation in these sessions is sometimes facilitating. It is clear that for every second participant, teleconferencing is certainly facilitating learning at a distance.

But when we come to question five it is found that, although the learning needs of 67.5% students are sometimes satisfied at the end of the teleconferencing session, only 26.0% students say that their learning needs are always satisfied at the end of these sessions. This reflects that students, perhaps, have more learning problems than taken up during the session - maybe due to paucity of time and costs involved in engaging the satellite for this purpose.

On the whole, on the basis of the results in this section, it can be said that teleconferencing sessions are perceived by a majority of participants to be giving them good feedback for their learning at a distance. In fact teleconferencing sessions at IGNOU are not only doing a good job of extended contact programme (ECP), but if examined from the point of view of teaching and feedback they are also extending the experience of classroom teaching to students all over the country.

3.4.2.4 Cost-effectiveness of teleconferencing sessions

With regard to students' perception about the cost effectiveness of the teleconferencing sessions in which they participate, the responses of students in table 3.96 reveal that 41.6% students always find participation in these sessions to be worth the time and money they spend for attending them.

Table 3.96 Cost-effectiveness of feedback through teleconferencing

Response ➔	*Always*		*Sometimes*		*Never*	
Quality Questions ↓ (*N = 77*)	*f*	%	*f*	%	*f*	%
Do you find participation in teleconferencing sessions to be worth the time and money you spend for them?	32	41.6%	34	44.2%	11	14.3%

And 44.2% students sometimes find participation in them to be cost-effective. For only 14.3% students they are not cost-effective. Do these 14% students belong to the group which is spending more than 400 rupees for attending these sessions and not able to generate a discussion on their learning problems? If so, than it can be inferred that participation in teleconferencing sessions is definitely a cost-effective mode of getting good feedback for students, provided cost of participation is lowered by increasing the network of study centres and a provision for more discussion time is made.

3.4.2.5 Satisfaction with feedback through teleconferencing

With regard to students' satisfaction with the feedback they get through teleconferencing sessions, the data in table 3.97 reveals that 41.0% students feel very satisfied with their participation in the teleconferencing sessions.

Table 3.97 Satisfaction with feedback through teleconferencing

Response →		*Very satisfied*		*Just satisfied*		*not satisfied*	
Quality Questions ↓	*(N = 78)*	*f*	*%*	*f*	*%*	*f*	*%*
How satisfied you feel with your participation in the teleconferencing sessions on your course?		32 41.0%		34 43.6%		12 15.4%	

And 43.6% feel just satisfied with this participation. Since only 15.4% students say that they are not satisfied with their participation, it is fairly clear that the teleconfernecing sessions of IGNOU are saisfactory for a big majority of participating students. If the total results pertaining to teleconferencing in this section are put together than it is found that around 15% students have in general not responded favourably to all the questions. Hence a further study should be undertaken to make an indepth probe into the characteristics, life space and opinion of these students to find out as to what factors are responsible for their dissatisfaction. Such a study should also reflect on the parameters to improve the quality of feedback to students participating in the teleconferencing sessions.

3.4.3. Feedback through the Internet

The students of the FernUniversität who have personal computers with internet connection have the possibility of interacting with their academic staff through the internet. They could not only use their computer terminals for E-mailing their queries but also use many other facilities, such as ordering books from the central library, which the university offers on-line for the students. In certain faculties like Informatics and Electrotechnics the students often have the facility to join on-line seminars and discussions on their courses initiated by the staff. This on- line link-up to join a virtual seminar is particularly important in distance education, as it offers the students a possibility to not only put their view points for comments and discussion but it also enables them to benefit from ideas of other students and the commentary of the academic staff.

In this study initially it was planned to probe deeply into the quality of feedback that the students get on entering into a on-line seminar, but it could not be done because of certain technical problems related to sampling out the users of the on-line facilities. Further, as the use of on-line facilities through the internet for feedback purpose is still at its infancy in the experimental phase at the FeU, it was advised that a general survey of the access of internet facility along with certain items of interest would suffice for the time being in this study. Hence the survey pertaining to the use of the internet for feedback purpose was limited to certain general items of information. However, the results reported in the following sections should provide sufficient information about the status of the use of internet facility for feedback purpose in the FeU. As the number of students using this facility at FeU is so little that only reporting of findings has been done and deliberately no inferences have been drawn.

3.4.3.1 Access to internet

How many active students of FernUniversität have an access to internet facility and is this facility available at their homes? The figures in response to these questions in table 3.98 reveal that 53.8% students have an access to a Personal Computer (PC) with internet connection. And that out of these, 48% have the PC with internet connection at their home.

Table 3.98 Access to internet facilty

Response ➔	*Yes*		*No*	
Questions ➘	*f*	*%*	*f*	*%*
1. Do you have an access to a PC with internet connection?	225	53.8%	193	46.2%
2. Do you have this PC with internet connection at home?	184	48.0%	199	52.0%

Hence it is clear that almost every second active student of FeU has a personal computer with an internet connection at her/his home.

3.4.3.2 Use of Net-News facility

The 'FernUniversität on line' offers a variety of services to its clients on the internet through what is called as Net-News Service. Of the various services, three services are particularly relevant for the students' learning, they are: (i) taking part in a discussion on your course through hooking your self to the net-news discussion groups; (ii) sending your assignments on line for evaluation (mostly CMAs); and (iii) ordering books from the central library of the university. Three questions were asked to know how many active students of this university use these facilities.

An analysis of students' responses to these questions in table 3.99 reveals that only 38 i.e. 9.7% students, from the total sample of 529, reported that they have ever hooked themselves to the FernUniversität's Net-News discussion groups. This means that only 38 students out of 184 who reported to have a PC with internet connection at home use this facility to get feedback by joining discussion groups in which often the teaching faculty also joins into provide feedback to the students.

Table 3.99 Use of net-news facility

Response ➔	*N*	*Yes*		*No*	
Questions ↓		*f*	*%*	*f*	*%*
1. Have you ever hooked your self to the FernUni. net-news discussion groups?	391	38	9.7%	353	90.3%
2 Have you ever sent your assignments for evaluation over the internet?	36	16	44.44%	20	55.55%
3. Have you ever ordered books from the library over the internet?	37	21	56.75%	16	43.25%

In response to the second question in table 3.99 only 36 students responded and 16 of them said that they have used the internet facility to send their assignment for evaluation. This means that of the 9.7% students who enter into a internet connection with FeU only around every second from them sends assignments through it. With regard to ordering books from the central library of the FeU through the internet, slightly more students use this facility i.e. 56.75% of around 9.7% of the total sample.

On the basis of these findings it is clear that though the FeU is offering many support services to its student, they are being hardly used by the students. A question that should really concern the FeU authorities is why students are not using these services, though its every second active student has an access to a PC with internet connection? With such little use, the heavy investment in the development and maintainence of these services cannot be justified.

3.4.3.3 Some Indicators of the Quality of Feedback

Finally three more questions were asked to those students who were using the Internet connection to join Net-news discussion groups for getting course related feedback. The intention of these questions was to get an idea about the quality of feedback that the students were getting through the internet.

3.4.3.4 Number of contacts

In the last one study year how many contacts did the students have with their teaching staff on the Net-news over the Internet? The data in table 3.100 reveals that of the 37 students who responded to this question, 5 students (13.51%) had one contact, 6 students (16.21%) had two contacts, 16 students (43.24%) had three contacts, and 10 students (27.02%) had four and more contacts with their teaching staff on the internet in one study year.

Table 3.100 Number of contacts on internet

No. of contacts	*Frequency*	*Percent*
One contact	5	13.51%
Two contacts	6	16.21%
Three contacts	16	43.24%
Four & more contacts	10	27.02%

3.4.3.5 Usefulness of internet contacts

Did the students find the internet contact with the teaching staff to be useful for their learning? The students' response to this question in table 3.101 reveals that for 13 students (34.2%) these contacts were always useful for their learning. For 15 students (39.5%) they were sometimes useful. However, 10 students i.e. 26.3% never found the internet contact with the teaching staff to be useful for their learning.

Table 3.101 Usefulness of contact on internet

Response →	*Always*		*Sometimes*		*Never*	
Question ↓ *(N = 38)*	*f*	*%*	*f*	*%*	*f*	*%*
Did you find contacts on internet with your teaching staff to be useful for your learning?	13	34.2%	15	39.5%	10	26.3%

3.4.3.6 Cost-effectiveness of internet contacts

With regards to students' perceptions about the cost-effectiveness of the internet contacts with their teaching staff the figures in table 3.102 reveal that 18 students i.e. 48.6% of those who had a contact with the teaching staff on the internet always found these contacts to be worth the time and money spent for them. As against 39.5% students who found these contacts to be sometimes useful for their learning, only 18.9% students find them to be sometimes cost-effective. For almost every third student, who contacts the teaching staff on internet, these contacts are never worth the time and money they spent for them.

Table 3.102 Cost-effectiveness of internet contacts

Response →	*Always*		*Sometimes*		*Never*	
Questions ↓ *(N = 37)*	*f*	*%*	*f*	*%*	*f*	*%*
On the whole, do you find internet contact with teaching staff to be worth the time and money spent for them?	18	48.6%	7	18.9%	12	32.4%

The difference in the students' perceptions about the usefulness of internet contacts and the cost-effectiveness of these contacts seems to be significant, hence it can be inferred that cost-effectiveness of internet contacts is perhaps not related with their usefulness. The reverse may also be true.

4. Summary and Conclusions

The basic premise of this study was that real two-way communication is essential for educational transaction in distance education, and that this communication cannot take place unless a provision for 'insistent and potent' feedback is inbuilt in the process/es adopted for it i.e. non-contiguous communication in the case of distance education. The feedback is insistent and potent if it allows dialogue between the involved parties and enables them to negotiate about the meaning of what is being communicated. Such could be the feedback if it has the five characteristics suggested by Store and Armstrong (1981), they are: immediacy, regularity, explanatory rather than judgemental, conciseness, and clarity. Based on this premise, a review of studies in the field of distance education revealed that no study so far has evaluated the feedback to students in terms of these qualities. Hence this study was undertaken to evaluate in terms of students' perceptions if the feedback, they get through various strategies of communication adopted by their supporting institution, has these qualites or not. The study went beyond to examine the students' perceptions about the cost-effectiveness of this feedback and their satisfaction with it.

With this as a starting point, the survey questionnaire developed for this study was mailed to 2500 **active students** in the German FernUniversität (FeU) and 2500 **active students** in the Indira Gandhi National Open University (IGNOU) in India during the months of August to October, 1996. A comparison of the perceptions of students from Germany and India was expected to help in our understanding as to whether the material development (particularly the development in communication technology) of a society results in a better support to students in distance education, and as to whether adult students in two cultures have different perceptions about two-way interaction in distance education. Here below is reported the summary of the findings based upon 529 returns from the students of FeU and 653 returns from IGNOU students.

4.1 Summary of Findings

On the whole, the results of this research tend to confirm that material development of a society does influence the delivery of instruction in distance education. The technological advancement in the area of computers results in a better feedback through this machine and perhaps more dependence on it in future. The major findings of the study are presented in this section.

With regards the characteristics of the active students in both universities, IGNOU has relatively more younger students than FeU. There are almost 13% more female students in FeU. A quarter of active students in both universities are unemployed, IGNOU has 6% more full-time employed students and FeU has almost 6% more Part-time employed students. Consequently there are more part-time students in IGNOU and more full-time students in FeU.

With regard to the **feedback through Tutor Marked Assignments (TMAs)**, it was found that students of FeU on an average send in 10 to 11 assignments in a study year, as compared to this IGNOU students send only 2 to 5 assignments for evaluation by the tutors. Except 1.2% FeU students who send their assignments by E-mail, the rest send them by post. But in IGNOU only 41.3% students post them, the rest report to either hand them over personally or use both hand and postal delivery according to their convenience.

The average turn-around time of corrected and commented TMAs at FeU for more than 85% students is around three weeks, this is the case for only around 45% students in IGNOU. For the rest it may be even two months. As compared to every third student in IGNOU, every second student of FeU always finds this turn-around time to be suitable for them. In the case of a big majority of IGNOU students the feedback through TMAs is either delayed but of some use (45%) or too delayed to be of any use (25%). The students of FeU consider two weeks and the students of IGNOU consider four weeks time as the ideal turn-around time of TMAs.

In terms of the quality, the feedback through TMAs is significantly more regular at FeU than IGNOU i.e. the replies to students' TMAs come back at regular intervals in the same sequence as they sent them for evaluation. This reflects delay and perhaps piling of assignments at IGNOU.

The feedback through TMAs is equally explanatory and judgemental in both universities i.e the tutors write detailed comments to explain the causes of mistakes rather than just telling what was wrong, though only every fourth student in FeU and every third student in IGNOU report this quality to be always present in the tutor's comments. Otherwise more than 60% students in FeU and more than 40% students in IGNOU find this quality to be only sometimes present in the tutor's comments.

Qualitatively the feedback through TMAs is significantly more concise, i.e giving students to the point information they need to correct their mistakes, at IGNOU than at FeU. But the two universities do not differ significantly, as far as the clarity of this feedback is concerned, i.e. the comments are perceived to be equally free from difficulties and confussions.

The feedback through TMAs has been perceived to be equally facilitating the learning by students of both universities. The results comparing the overall quality of Feedback through TMAs also did not reveal any significant difference between FeU and IGNOU.

These results reveal that at FeU the feedback through TMAs is significantly more regular than IGNOU, but it is significantly more concise at IGNOU. Otherwise, on the whole, qualitatively the feedback through TMAs is the same at both universities.

However, as compared to students of IGNOU, the students of FeU on the whole find it to be a significantly more cost-effective use of the money they spend to get feedback through the TMAs. In addition the students of FeU are also significantly more satisfied with this feedback than the students of IGNOU. It appears that duration of turn-around time of TMAs is related to students' perceptions about the cost-effectiveness and satisfaction.

With regard to the feedback through **Computer Marked Assignments (CMAs)**, it was found that the active students of FeU send on an average 3 to 4 CMAs in a study year, whereas students of IGNOU send only about 2 in the same study period. Barring 5.5% students in FeU who use E-Mail, rest 94.5% students in FeU and 73.6% students in IGNOU who send their CMAs by post for evaluation. The rest of the IGNOU students either handover the CMAs personally or use postal service according to their convenience.

The average turn-around time of CMAs is about two weeks at FeU and it is about four weeks at IGNOU. As compared to 68.9% FeU students only 19.4% IGNOU students find the learning support through CMAs to be coming back well in the expected time, otherwise it is found to be delayed but of some use by 24.5% students in FeU and 40.3% students in IGNOU, where exactly the same number of students find this support to be too delayed to be of any use for learning. The expected best turn-around time of CMAs is two weeks for the FeU students and it three weeks for IGNOU students.

With regard to the quality of feedback through CMAs, the feedback at FeU was significantly better than at IGNOU in all the five qualities. Specifically it was significantly more regular, explanatory and judgemental, concise, clear and facilitative than that provided to students of IGNOU through the CMAs.

Not only the overall quality of feedback through CMAs at FeU was found to be significantly better than IGNOU, but it was also considered to be significantly more cost-effective and satisfying by the students of FeU.

With regard to the **feedback through the Personal Correspondence (PC)**, the students initiate with their tutor/teacher for getting feedback, more than 80% active students in both universities reported to write on an average two letters to their tutor/teacher in a study year. But when more probing questions pertainig to the quality of feedback through this personal correspondence were asked only about 11% students of FeU responded to further questions. This reflectes that very few active students in FeU use this second channel of communication for further feedback after receiving back their assignments. While all students of IGNOU use postal service for this correspondence, only 70% students of FeU post their letters, of the rest 30%, around 14% exclusively use fax and 6% use E-Mail and the rest 10% use both modes for this personal correspondence.

The average reported turn-around time of replies to personal letters is 10 days in FeU and 25 days in IGNOU. However, it is commendable to note that more than 66% students in FeU and 24% students in IGNOU receive back the replies within five days. For a majority of 81% students in FeU this time gap is suitable as the replies come back within the expected time, but this is the feeling of only 29% students in IGNOU. For 42% IGNOU students these replies are delayed but still considered by them to be of some use for learning. Students in both universities feel that an avarage of two weeks time is best for these replies.

With regard to the quality of feedback through Personal Correspondence, the feedback is perceived by the students of FeU to be significantly more regular than by the students of IGNOU. Which means, as compared to IGNOU students, the replies to FeU students' personal letters come back more regularly and in the same sequence as they wrote them.

The feedback that comes from the tutor/teacher in the form of replies to further personal correspondence has been perceived to be significantly more explanatory by the students of FeU and significantly more judgemental by the students of IGNOU.

The replies to personal letters at the FeU are perceived to be significantly more concise and clear than those at IGNOU. This means that tutors/teachers at FeU write to the point answers to the students' queries which are perceived by them to be clearly free from difficulties and confusions.

As compared to IGNOU, the feedback in the form of replies to personal queries at FeU has been perceived by its students to be not only significantly more facilitating but also significantly more cost-effective and satisfying.

With regard to the **relative quality of feedback through TMAs, CMAs and PC**, the findings revealed that at the FeU the students perceived to get significantly the best feedback, in terms of quality, from their tutors/teachers in the form of replies to their personal letters which they wrote to them for getting further clarifications. And that this feedback was perceived by them to be significantly the most cost-effective and most satisfying, when compared to the feedback they got through TMAs or CMAs.

At the FeU, significantly the next best feedback to students, in terms of quality, came through the CMAs and not through the TMAs. The feedback through CMAs was also considered by the FeU students to be significantly more satisfying than that they got through TMAs. However, the feedback through CMAs and TMAs was perceived to be equally cost-effective. Thus it is clear that computer generated tutorial comments are perceived by the FeU students to provide significantly better and more satisfying feedback than tutor written comments.

With regard to the relative quality of feedback through TMAs, CMAs and PC at IGNOU, the students perceived to get equally the best feedback, in terms of quality, from the tutor-marked assignments and through the personal correspondence they initiated with their tutor/teacher. And that this feedback was perceived by them to be equally cost-effective, as compared to the feedback they got from CMAs. Thus at IGNOU, the feedback through computer marked assignments was not only perceived by the students to be least qualitative but also least cost-effective. However, the feedback through the three forms of written communication was perceived by these students to be equally satisfying.

With regard to the feedback that the students of both universities get through face-to-face interaction during: (i) individual contact with the course staff (IC); (ii) voluntary contact with tutors/mentors at the study centres (VCS); and group seminars organised by the faculty staff (GS) the following were the major findings of this study.

42.15% students of FeU and 66.15% students of IGNOU report to contact the faculty course staff individually to get clarifications on their learning doubts. Almost 60% students of FeU and 48% students of IGNOU visit the study centres to individually consult the tutors/mentors there for getting a redressal of their learning problems. Around 52% active students of FeU and 43% active students of IGNOU attend group seminars organised by the teaching faculty to get face-to-face feedback from them.

As regards the **quality of feedback during individual contacts (IC)** with the course staff of the faculty is concerned, it was found that the feedback was significantly more explanatory from the FeU staff than the IGNOU staff. Which means the delivery of the FeU staff when they are individually called upon by the students is significantly more explanatory than the IGNOU staff.

Similarly the students of FeU report to get significantly more concise i.e. to the point information from their staff during individual contacts than the IGNOU students. Inspite of this the students of FeU differ significantly in their perception from the IGNOU students with regard to the clarity i.e. they often find the delivery of its staff to be more confusing during these individual contacts.

Except for the above two significant differences, the feedback from the faculty staff during individual contacts has been perceived by the students of both universities to be equally facilitative and equally good in terms of the overall quality of this feedback. However, the students of FeU find the feedback during their individual contact to be significantly more cost-effective then the students of IGNOU. But the students of IGNOU find it to be significantly more satisfying than the students of FeU.

The results pertaining to the **quality of feedback during voluntary contacts with tutors at the study centres** are exactly the same as reported above for the quality of feedback that students get during individual contacts with the teaching faculty. Specifically it was found that feedback from FeU mentors at the study centres was significantly more explanatory and concise, but significantly less clear than that provided by the tutors at the study centres of IGNOU. And it was perceived to be equally facilitative by the students of both universities.

Though the overall quality of feedback from the tutors at the study centres of both universities was found to be equally good, however, it was perceived to be significantly more cost-effective by the students of FeU and significantly more satisfying by the students of IGNOU.

With regards the **quality of feedback during group seminars**, the delivery of the staff of FeU was perceived by its students to be significantly more explanatory and concise than that of the IGNOU staff. However, with regard to the clarity of feedback i.e. whether the delivery of the staff during group seminars is non-confusing and free from doubts, the students of IGNOU were significantly in a better position than the students of FeU.

In the overall perception of the students the feedback during the group seminars is equally qualitiative at both universities. However, students of FeU find it to be significantly more facilitative and cost-effective than the students of IGNOU. But the IGNOU students are significantly more satisfied with it than the students of IGNOU.

With regard to the **relative quality of feedback during the face-to-face sessions**, it was found that at FeU qualitatively the feedback to students was the same during the three forms of face-to-face interaction possibilities they had. In other words, the feedback to FeU students from the teaching faculty during group seminars or during students' personal individual contact is qualitatively as explanatory, concise, clear, and facilitative as provided by the mentors at the study centres, when the students voluntarily call uopn them for academic clarifications. And the students of FeU are almost equally satisfied with the feedback they get during these face-to-face contacts. However, the feedback during group seminars is significantly more cost-effective than the feedback students get at the study centres. Even the feedback during individual contacts with teaching faculty is significantly more cost-effective than the feedback during contacts with mentors at the study centres.

At IGNOU the feedback during the three forms of face-to-face interaction possibilities has been perceived by the students to be equally qualitative, equally cost-effective and equally satisfying.

With regard to the **feedback through non-contiguous interaction on electronic media**, the use of telephone was compared in the two universities and the use of teleconferencing and computer for feedback purpose was studied separately in these universities.

With regard to the **use of telephone**, it was found that a little more than every second student (54%) in FeU and a little less than every second student (46%) in IGNOU call their course staff on phone for getting clarifications related to the course. More than 70% active students of those 54% and 46% respectively in both universities call their staff at least once in a month. The frequency about the use of telepohne in these universities clearly reveals that students prefer telephone conversation rather than postal correspondence.

For almost every second student in both universities, the staff becomes immediately available on the phone to reply them in their first attempt. 15% students in FeU and 10% students in IGNOU reported that this happens in the second attempt. The calls of 13.8% students in FeU and 19.3% students in IGNOU are never replied by the concerned staff.

With regard to the quality of feedback on phone, it was found to be significanlty better at FeU than at IGNOU. As compared to students of IGNOU, the students of FeU not only found the feedback on phone from their staff to be significantly more cost-effective but also more satisfying.

With regard to the **use of teleconferencing** at IGNOU for feedback to students, just 78 students from the sample of 653 reported to have taken part in the teleconferencing sessions at IGNOU. Of these, 42% participate to enter into a discussion with staff and fellow students on issues which confuse them, 58% participate to discuss with the staff problems related with assignments, and 82% participate to get more information related to the course i.e. benefit from the teaching of the expert staff.

The results pertaining to the quality of feedback students get through teleconferencing sessions revealed that a good majority of participants either always or sometimes find the asked qualities present in these sessions and that they, on the whole, appear to be satisfied with the feedback they get by participating in the teleconferencing sessions. In the perceptions of a majority of students these sessions are cost-effective for the feedback they get.

With regards to the **use of computer** for feedback to students at FeU, it was found that more than 50% students of this university have a personal computer at home with internet connection. However, only 38 active students in the sample of 529 reported to have used the FernUniversität's Net-News facility for feedback purpose. From these 16 students also report to send their assignments and 21 students report to order books from library through the Net-News.

Almost every second user of the Net-News facility reported to have at least three contacts with the teaching staff in a study year. Some 27% students reported to have even more than four such contacts. 34% of the users always found the internet contact with the teaching staff to be useful for learning, for 39% students this was the case only sometimes, and 26% students never found these contacts to be useful for learning.

Almost every second user reported these contacts to be always cost-effective but more than 32% students never found these contacts to be cost-effective. On the whole, the computer's use for feedback purpose seems to be still in infancy at FeU with a scope to do a lot of research and development work to make a cost-effective use of this machine in this direction.

4.2 Conclusions and Implications

The implications pertaining to the specific significant differences between the two universities in the quality of feedback through various feedback strategies have already been drawn while interpreting the results of this study in Chapter 3. In this section major conclusions based on the results of this study are drawn and their reflections for distance education in general are discussed.

This comparative study of the perceptions of students from the German FernUniversität and the Indian Indira Gandhi National Open University revealed a number of signficant differences which supprt the hypothesis that material development of a society results in a better support to students in distance education. In general the FernUniversität has been found to provide its students better feedback than the IGNOU. Feedback from all forms of non-contiguous communication examined in this study has been found by the students of FeU to be significantly more cost-effective than the students of IGNOU. This is a direct reflection of not only the quality of feedback as the students consider the involved time and costs to be well invested but also of the fact that the direct costs lie within easily affordable limits of people in Germany - which is a much more affluent society than India.

The finding that feedback through computer-marked assignments is better than tutor-marked assignments at FeU, and that it is least qualitative and cost effective at IGNOU, not only supports the above contention but also reflects the impact of industrialisation in Germany on distance education. Another support for this contention is found in the results pertaining to the quality and cost-effectiveness of feedback through tutor-marked assignments in the two universities. Though qualitatively the two universities do not differ significantly in this form of human feedback to its students, yet it has been perceived to be more cost-effective by the students of FeU. This again is due to high mechanisation and automation in not only handling the students' assignments at FeU but also in the postal services in Germany - which results in a satisfactory turn-around time of students' TMAs in Germany, thus making them more cost-effective.

While the finding that computer-marked assignments at FeU provide qualitatively better feedback to students than the tutor-marked assignments, and that it is perecived by the students to be significantly more cost effective and satisfying, indirectly corroborates the results of the experimental studies by Bååth and Mansson (1977) and Bååth (1980), this finding also renders direct support to the success of the application of principles of rationalisation, division of labour and mechanisation as discussed by Peters $(1973)^2$ at the FeU.

Due to the: (i) pressure of increasing costs involved in getting students' assignments evaluated by tutors; and (ii) problems of delay, negligence, apathy etc. associated with human involvement in work, the artificially intelligent computers of the 21st century are bound to replace todays tutor marking the students' assignments.

Further, in the very near future, the ever increasing worldwide influx of private enterprises in the field of distance education and the compelling budgetary stringencies will soon compell the existing distance teaching universities to adopt ways and means to become commercially viable - if not commercial enterprises. Hence, the 21st century will witness an uncontended wider application of Peters (1973) theory of industrialisation of education through distance education. The first casualty, perhaps, will be the tutor marking the assignments of students in distance education, as they cost too much to the system.

In my personal opinion, the distance teaching universities in developing countries like India, faced with the challenges put by the ever increasing influx of private and foreign distance teaching systems, the ever increasing demand for higher education, the dwindling economic scenario and less governmental funding, will be soon compelled to apply the principles of industrialisation to make their systems economically more viable. Otherwise the much cost-efficient distance teaching systems of the west through private entrepreneurs will establish their roots in these countries and exploit the commercial character of distance education. In fact we already see in India many advertisements of certain Australian, British and American distance teaching systems to attract the english speaking Indian students. The charm is to get a foreign university degree at much lower costs than those required to get a similar degree from a university in India.

With regard to this postive application of off-line computers, we noted the views of Holmberg (1982) in section 3.2.4 that "this positive view of off-line computers can hardly be interpreted as

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[2] also refer Keegan (1994).

a general recommendation to do without tutor-marked assignments or personal non-contiguous communication generally''. The findings of this study refute Holmberg's contention about the tutor-marked assignments and it has been argued above that they will be in times to come replaced by computer-marked assignments. But the findings of this study support Holmberg's contention about personal non-contiguous communication between the student and those teaching at a distance, as feedback through personal postal correspondence has been perceived by the students of FeU to be most qualitative, cost-effective and satisfying and that it has been found to be equally qualitative, cost-effective and satisfying by the students of IGNOU, as compared to the feedback through TMAs or CMAs.

No doubt that personal non-contiguous communication in distance education is important and will continue to be - this was also the basic theoretical premise of this study. However, the data in this study casts doubt about the importance of the postal two-way communication, as only around 10% active students of FeU from a sample of 529 and around 30% active students of IGNOU from a sample of 653 have reported to be getting feedback through postal channel of non-contiguous communication.

The results pertaining to the use of telephone for getting feedback indicate that almost every second student in both universities uses this medium of non-contiguous communication for getting redressal of their learning problems. Since the feedback on phone is immediate and as it allows negotiation of meaning, it is insistent and potent. Further, it is also cost-effective, as higher cost of a call is compensated by the time and effort saved, otherwise invested in writing, posting and then waiting for a reply for getting feedback through postal correspondence. Hence in times to come when it becomes possible, through the integration of multi-media computers and automatic answering machines, to handle more efficiently students' calls, it may not be a big wonder that distance teaching systems in 21st century even apply principles of industrialisation in this department of distance education also. Anyway it is clear that postal correspondence is something that belonged to the era of correspondence education.

The findings about the quality of feedback students get during the three forms of face-to-face sessions, i.e. individual contact with the faculty, voluntary contact with staff at study centres and contact with teaching staff in group seminars, clearly revealed that a large majority of students in both universities view these contacts very positively and that distance students in both societies appear to be equally face-to-face teaching oriented. Since the two universities do not differ significantly in the quality of feedback they provide to their students through the three forms of face-to-face interaction sessions, it is clear that the standard of human teaching/tutoring in the two societies is comparably good. The better cost-effectiveness of this human feedback at FeU, however, can be attributed to the affluence in Germany.

Another important finding, regarding the feedback that students of the two universities get during face-to-face sessions, was that at FeU feedback by the teaching faculty either during group seminars or during students' personal individual contact is qualitatively as good as it is being provided by the mentors at the study centres, when the students voluntarily contact them for academic clarifications. At IGNOU also the feedback through these three forms of personal contact was found to be equally good. These findings have important economic implications for both students and these universities. For students these findings imply the selection of any of these forms of personal interaction for feedback which they find to be more cost-effective and satisfying. For example, a student who finds contacting the tutor at the study centres to be more cost-effective and satisfying than contacting the faculty staff at the headquarter of the university will not be disadvantaged if he seeks feedback just at the study centre only. For the universities these findings may imply more provision of only those face-to-face interaction possibilites which demand less financial input on their part. For example, they could increase the number of group seminars and restrict further expenditure in the expansion of tutoring facilities through the network of study centres.

With regard to the interaction on electronic media, the findings of this study reveal that both universities are presently in the infancy stage in using sophisticated media for computer conferencing or teleconferencing.

At IGNOU, for example, the success of one-way video and two-way audio-teleconferencing has been demonstrated for extended contact programme (ECP) in one course for enabling the students to participate in group discussion and question answer sessions with experts in the field of their study. The results of this study also reveal some general indicatiors of the success of these teleconferencing sessions. However, the study reveals that a large number of students participating in these sessions are not able to generate discussion on their learning problems. This means they, though said to be participating in a teleconferencing session, are just viewing a one-way video and two-way audio discussion on the television screen. Such a viewing cannot be more cost-effective than viewing a 'Candid Classroom Videotape' (refer Rathore, 1988a). A candid classroom videotape is an undisturbed and a faithful live recording of a class taken by an expert. Hence the student, when he views the replay of this videotape, sees both expert and the fellow students - thus unlike the passive viewer of one-way video discussion in a teleconferencing session he views a two-way video interaction in which he benefits from the interaction of students in the class of an expert on the subject. The benefits of using such candid classroom videotapes in the form of 'Tutored Videotape Instruction' in distance education as discussed by Rathore (1988b) need to be judged vis-a-vis teleconferencing sessions, as the costs involved in teleconferencing are enormous to both the university and the students. In fact a very careful and cautious consideration about the quality of feedback through teleconferencing in terms of its cost-effectiveness and students' satisfaction is indicated by this study before such an expensive media is put to a larger use in a country like India.

With regard to the use of computer net-working for providing feedback to students in distance education, the findings of this study regarding its use at the FernUniversität are also not very encouraging. Although almost every second student of this university has a personal computer with an internet access, only 38 students have reported to have ever used the Net-News service for entering discussion groups for getting study related feedback on-line through their computers. Less than 50% of these users of the Net-News service find it to be always useful and cost-effective for learning purposes. Hence it is fairly clear that presently the optimum use of the investment already done in launching the Net-News service is not being made at the FeU.

As the internet facility makes it possible to enter into a virtual seminar on-line and interact through computers with a group of people having common academic interests, a lot of expectations have been attached to this medium for non-contiguous two-way communication in distance education. But so far no systematic research has evalutated its successful feasibilty in distance education in terms of the quality of feedback that participants of such a virtual seminar will get with what cost-effectiveness and learning satisfaction. At the time when this report was being written an experimental project to train and develop an international faculty in distance education through virtual seminar on internet, funded by AT&T under its Global Distance Education Initiative was under-way, under the leadership of Ulrich Bernath of Oldenburg University in Germany and Eugene Rubin of Maryland University in U.S.A. An evaluation study of the success and feasibility of this project is being simultaneously done by Helmut Fritsch at ZIFF, FernUniversität. The results of this study should have far reaching implications for widening and improving the Net-News activities not only at the FeU but also for distance teaching universities all over the world presently using or planning to use internet for tutoring students at a distance.

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Appendix

Questionnaire

Dear student,

As Distance Education is a relatively new field, lot of research is required to improve the quality of support services offered to you to facilitate your learning. It is in this context that an international research project to study the 'Quality of the Feedback (support) in Distance Education' has been undertaken by me. The results of this study are expected to enable us to identify those services which are not effective, and hence, to strengthen them to serve the cause of your learning better.

Luckily you have been selected in the sample of this study, a questionnaire for this research is being sent to you. Please carefully go through it and supply the complete information against each question in it. Although it will take some of your valuable time, but we are sure you will devote it, as the quality and reliability of this research depends solely on the information you supply. **The supplied information will be kept strictly confidential and used only for research and your name or identity will not be disclosed in any circumstance.**

I would appreciate and feel obliged if you send back the completed questionnaire in the attached envelop at an early date.

Thanking you,

your´s sincerely
Dr. Harish C.S.Rathore
Banaras Hindu University, India.
Presently: Humboldt Fellow at Zentrales Institut für Fernstudienforschung, FernUniversität, Germany.

The Questionnaire

The information asked below will enable us to judge the quality of feedback that you get through Tutor Marked Assignments(TMA), Computer Marked Assignments(CMA) , and in response to your Personal Correspondence (PC) with your course staff that you do to seek clarifications on your learning doubts. Answer by supplying the desired information as requested.

Questions	**Responses**	**For**	
	TMA	**CMA**	**PC**
1. In a course how many assignments/ personal letters you write to get the feedback? (give number)	_____	_____	_____
2. How do you send them? By **Post** or **Fax** or **Both** or **E-Mail,** Please write which is applicble.	_____	_____	_____
3. From the day of posting, after how many days you get back the reply? (give number of days)	_____	_____	_____
4. Do you find this learning support to have reached you : (1) well in expected time; (2) delayed but of some use; (3) too delayed to be of any use.(write number)	_____	_____	_____
5. How many days gap you think is best for your planned studies? (give number of days)	_____	_____	_____

Now answer these questions by writing 1 = always; 2= sometimes; and 3= never for TMA, CMA, and PC as they apply in your case.

	TMA	**CMA**	**PC**
1. Do the replies to your assignments / letters come back at regular intervals in the sequence you sent them?	_____	_____	_____
2. Do the comments/replies explain in detail the causes of your mistakes and give good suggestions to correct you?	_____	_____	_____
3. Or you find the comments /replies to be judgemental i.e. simply pointing out mistakes?	_____	_____	_____
4. Are the comments/replies concise i.e. giving to the point information needed to correct your mistakes/doubts?	_____	_____	_____

5. Do you find the comments/replies to be clear i.e. free from doubts, difficulties and confusions? _____ _____ _____
6. Do you find the comments /replies to be facilitative i.e. they make learning easy by removing your doubts? _____ _____ _____
7. On the whole, how often you find it to be a cost-effective use of the money you spend for this feedback? _____ _____ _____

How you agree with the following statements? Write 1 = Strongly agree; 2 = Agree; 3 = Undecided; 4 = Disagree; and 5 = Strongly disagree, as they apply to feedback you get through TMA, CMA and PC.

	TMA	CMA	PC
1. The written comments on assignments and replies to personal queries are a big support in distance learning.	_____	_____	_____
2. Submission of assignments or writing personal letters is a wastage of time and money in distance learning.	_____	_____	_____
3. The quality of feedback in the form of comments or replies is very good.	_____	_____	_____
4. The comments and replies are often sketchy and thus of no use for improving learning.	_____	_____	_____

Face - to - face Interaction

Regarding possibilities to personally discuss learning problems with the academic staff of the university, put a cross before those you use and then write respective percentage of their use.

Personal interaction possibility Used % of use

1. Individual consultation with course staff at the university (IC) _______
2. Voluntary consultations with tutors at the study centres (VCS) _______
3. Interaction with faculty during group seminars or PCP (GS) _______

Now answer these questions as requested:-

The Questions	**Answers pertaining to**		
	IC	**VCS**	**GS**
1. Last year, how many personal interaction sessions did you attend? (give number)	______	______	______
2. Approximately how much money did you spend to attend these sessions? (give amount)	______	______	______

Now answer questions below by writing the number of following response categories: (1) always; (2) somtimes; (3) never, as it applies to the feedback you get during: (i) Individual Consultation with faculty (IC); (ii) Voluntary contact at study centres (VCS); and (iii) Participation in Group Seminars (GS).

	IC	**VCS**	**GS**
1. Is the delivery of the staff during these sessions explanatory to remove your doubts?	______	______	______
2. Do you get to the point information desired by you during these sessions?	______	______	______
3. Is the delivery of staff in these sessions clear i.e. non-confusing and free from doubts?	______	______	______
4. Are these personal interaction sessions facilitating your learning?	______	______	______
5. Do you find these sessions to be worth the time and money spent to attend them?	______	______	______

How you agree with the following statements? Write : 1= strongly agree; 2= agree; 3= undecided; 4= disagree; 5= strongly disagree, as it applies in your case.

	IC	VCS	GS
1. The aims with which I attend these sessions are fully achieved.	______	______	______
2. There is no need of personal contact sessions in distance education system.	______	______	______
3. Getting a university degree without these sessions is almost impossible?	______	______	______
4. Except providing an oppprtunity to meet colleagues, these sessions are useless?	______	______	______

Telephone Tutoring

You have a possibility to call on phone the staff of your university to get clarifications on your learning doubts. Answer following questions by crossing the answer option that is your´s.

Questions	Answer options
1. How often you call your academic staff to get clarifications on your learning doubts?	(1) once a month; (2) once a week; (3) more
2. Is the staff immediately available on phone to clarify your learning doubts?	(1)1st attempt; (2)2nd attempt; (3) 3 to 4 attempts; (4) never
3. Do you find the purpose has been achieved for which you called up?	(1) always; (2) sometimes; (3) never
4. On the whole how satisfied do you feel with this telephone conversation?	(1)very satisfied(2)just satisfied(3)not satisfied
5. On the whole do you find this telephone talk to be worth the money spent in calling?	(1) always; (2) sometimes; (3) never

Computer Net-working / Conferencing

If your university offers services via INTERNET then answer questions below by crossing your response option:-

1. Do you have a computer with an access to internet net-working? (1) yes; (2) no
2. Do you have this PC with internet connection at home? (1) yes; (2) no
3. Have you ever hooked your self to the net-news discussion groups? (1) yes; (2) no
4. Have you ever sent your assignments for evaluation over the internet? (1) yes; (2) no
5. Have you ever ordered books from the library over the internet? (1) yes; (2) no
6. In the last one study year how many contacts did you have with your teaching staff on the Net-news discussion groups?(Give number)
7. Did you find these contacts on Net-news useful for your learning? (1) always; (2) sometimes; (3) never, (write number of your response)
8. On the whole, do you find these contacts to be worth the time and money you spend for them? (1) always; (2) sometimes; (3) never.

Teleconferencing

If your university is offering the possibility of Teleconferencing for students then answer questions below by putting a cross (X) on your response option.

1. Do you have a facility for teleconferencing in your course of study? (1) yes (2) no
2. If yes, then for which of the following purposes you participate in the teleconferencing sessions? (more than one answer possible)

(i) to enter into a discussion with staff on my learning problems. (1) yes (2) no
(ii) to discuss assignment related problems (1) yes (2) no
(iii) to get more information related to the course (1) yes (2) no

3. Give the approximate amount of money that you spent in the last study year to participate in these teleconferencing sessions. Rs.__________

Now answer the following questions by crossing (X) below your response option:

↓ **Questions** **Response options→**	**Always**	**Sometimes**	**Never**
1. In the teleconferencing sessions, how often are you able to generate discussion on your points of view?			
2. How often does the staff of your university join this discussion to clarify doubts?			
3. Do you find this discussion to clarify the points for which you initiated it?			
4. Do you find these discussions to be facilitating your learning as a distance student?			
5. On the whole, how often do you find your learning needs to be satisfied at the end of the disussion?			
6. Do you find entering these discussions to be worth the time and money spent for them?			
7. How satisfied you feel with your participation in these sessions? (1) very satisfied; (2) just satisfied; (3) not satisfied, write number of your response.			

Personal Information

Now please supply the following information. **The supply of this information is very important,** as it will enable us to compare your responses with other students accross cultures.

1. Name the degree for which you are studying ____________________________

2. How many semesters have you studied as a Distance student? ____________semester/s

3. Are you a part-time or a full time student? Part-time ☐ Full-time ☐

4. Tick your family stand: Married ☐ Unmarried ☐ Living with friend ☐

5. Tick your employment status: Full-time employed ☐ Part-time employed ☐
Unemployed ☐

6. Are you a Male ☐ or a Female ☐

7. Give the year of your birth : 19_____.

8. Have you taken some examinations? Yes ☐ No ☐

9. How many have you passed? Give number_______and name_________________.

10. Give percentage of obtained mark__________ or average of the obtained grade________.

Please use the reply paid and addessed envelop supplied with this questionnaire and do not forget to post it back to us. Thanks for your answering this questionnaire.